Appendix C

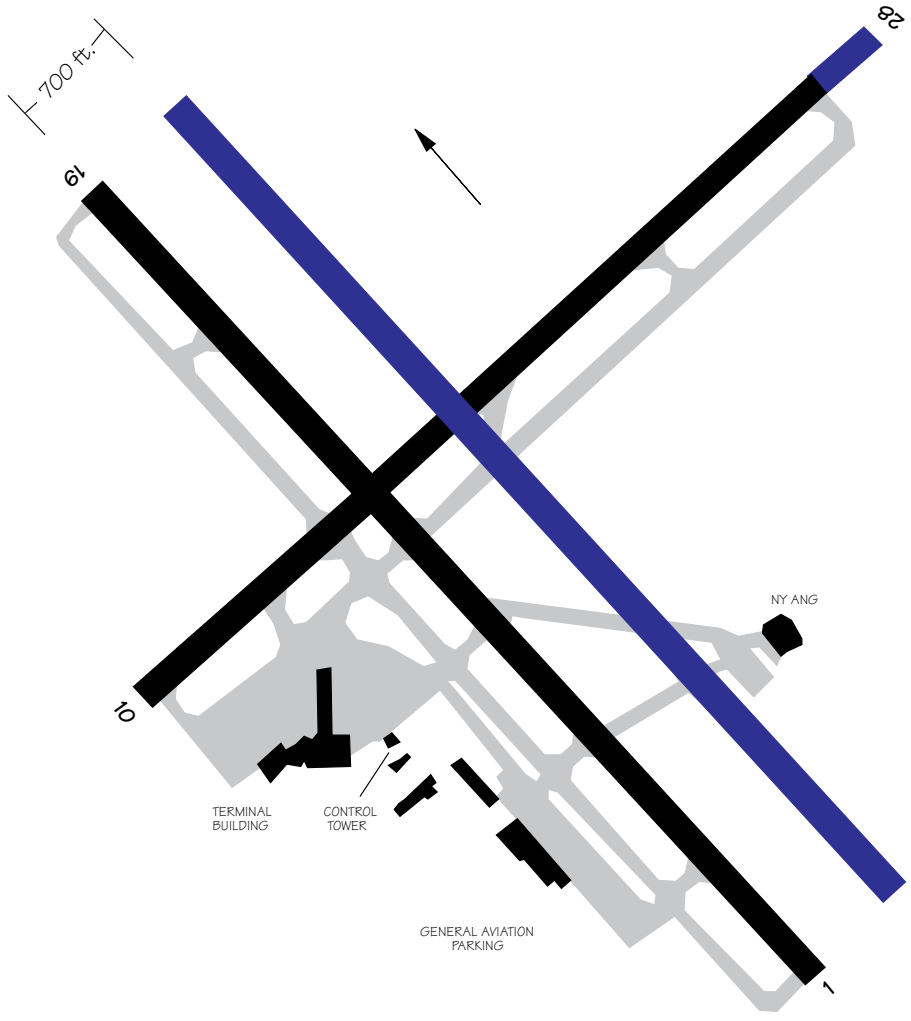
New Runway Construction Projects at Major U.S. Airports

Legend

- Existing Runway
- Existing Taxiway/Apron
- Proposed Runway/Runway Extension
- Proposed Taxiway/Apron/Facility Improvements
- Buildings

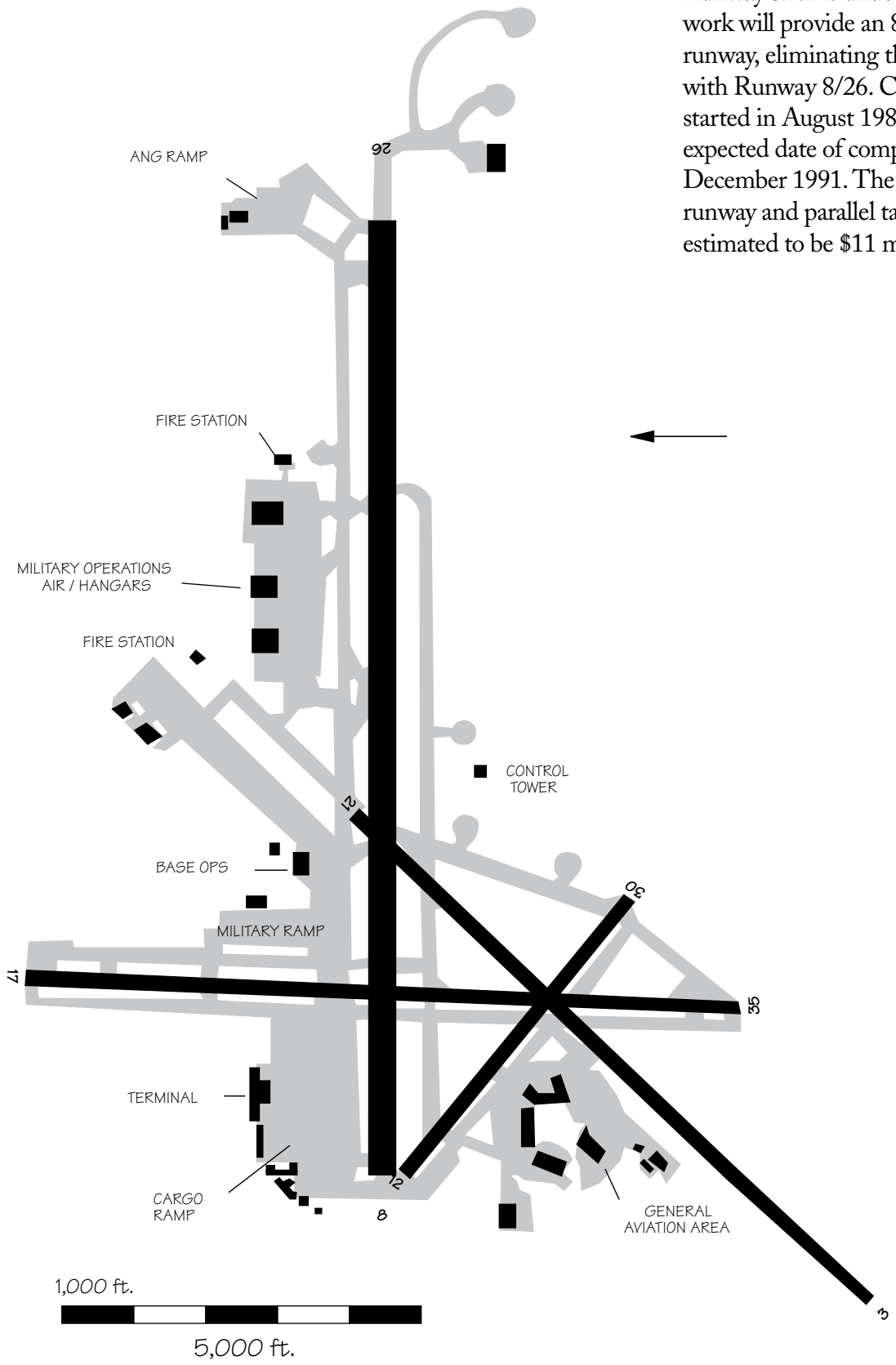
Albany (ALB)

An extension to Runway 10/28 is expected to begin in 1996 and should be completed sometime in 1997. The cost of constructing the extension is estimated to be $2 million. Albany is also planning a new parallel Runway 1R/19L to begin in 1997 and should be operational in 1999. Cost of construction is estimated to be $15 million.



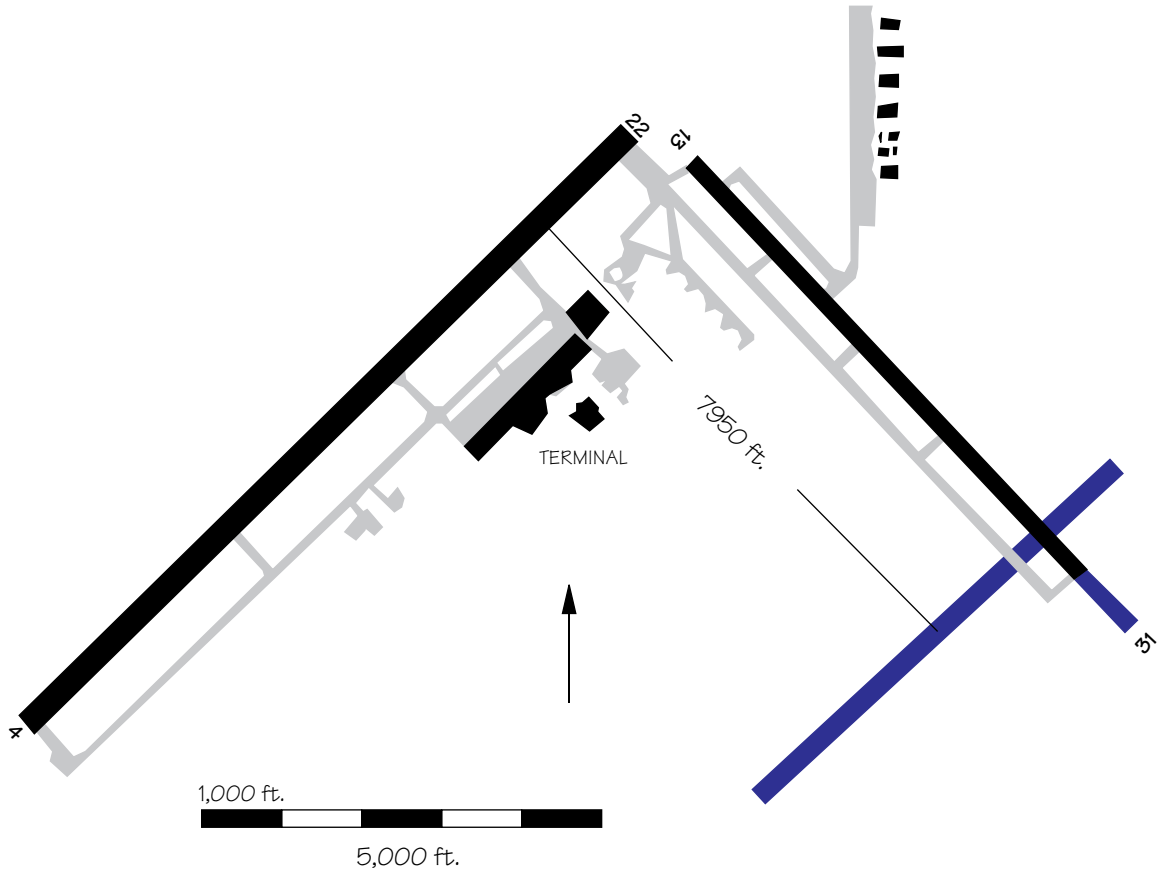
Albuquerque (ABQ)

A 3,200 foot extension to Runway 3/21 is underway. The work will provide an 8,800 foot runway, eliminating the intersection with Runway 8/26. Construction started in August 1989. The expected date of completion is December 1991. The cost of the runway and parallel taxiway is estimated to be $11 million.



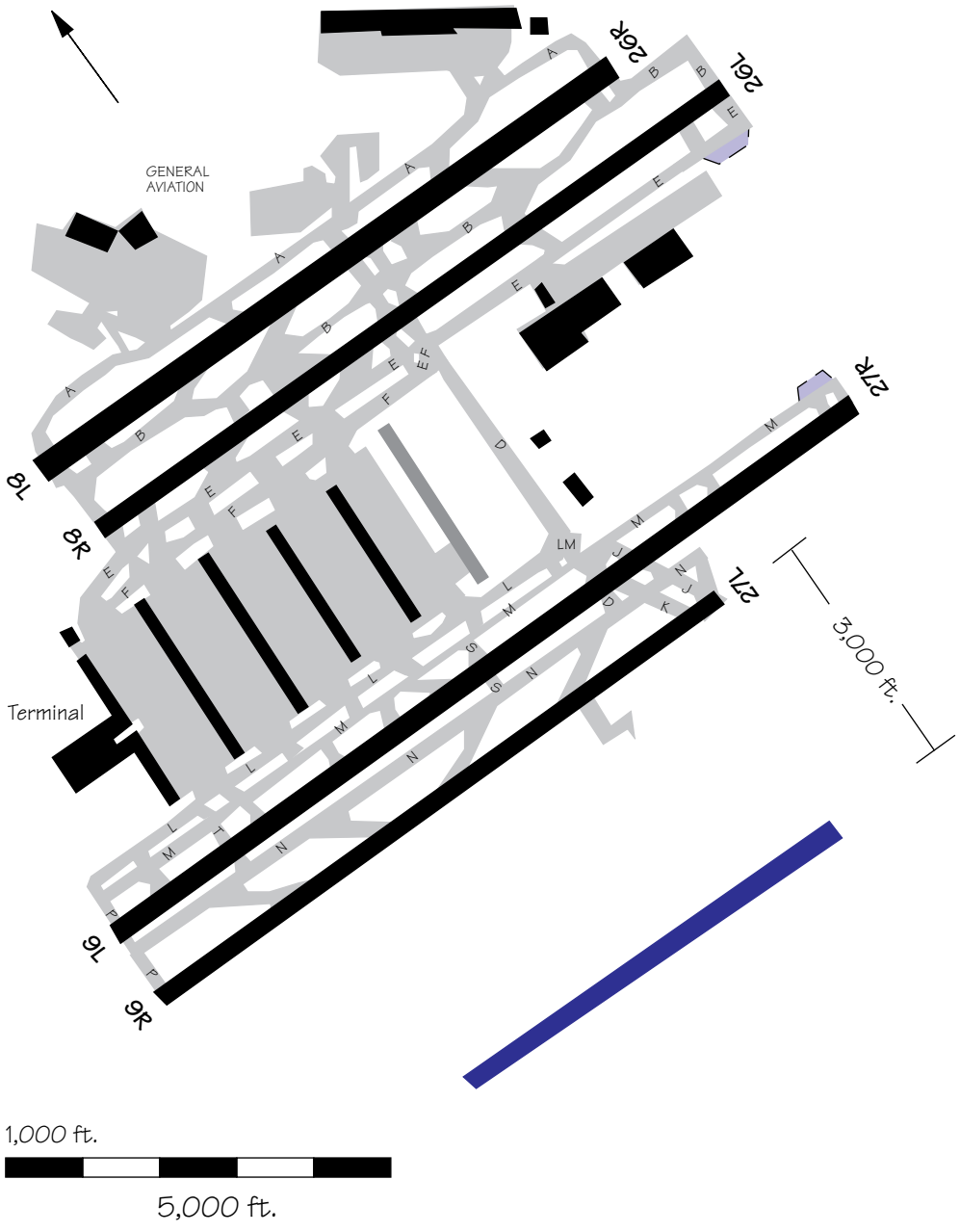
Amarillo (AMA)

An extension to Runway 13/31 is expected to be completed by late 1997.



Atlanta (ATL)

A fifth parallel runway, 5,500 feet long and 3,000 feet south of Runway 9R/27L, is being planned at Atlanta. The total estimated cost is $130 million. Construction is estimated to start in 1992; the estimated operational date is 1995.



Austin (AUS)

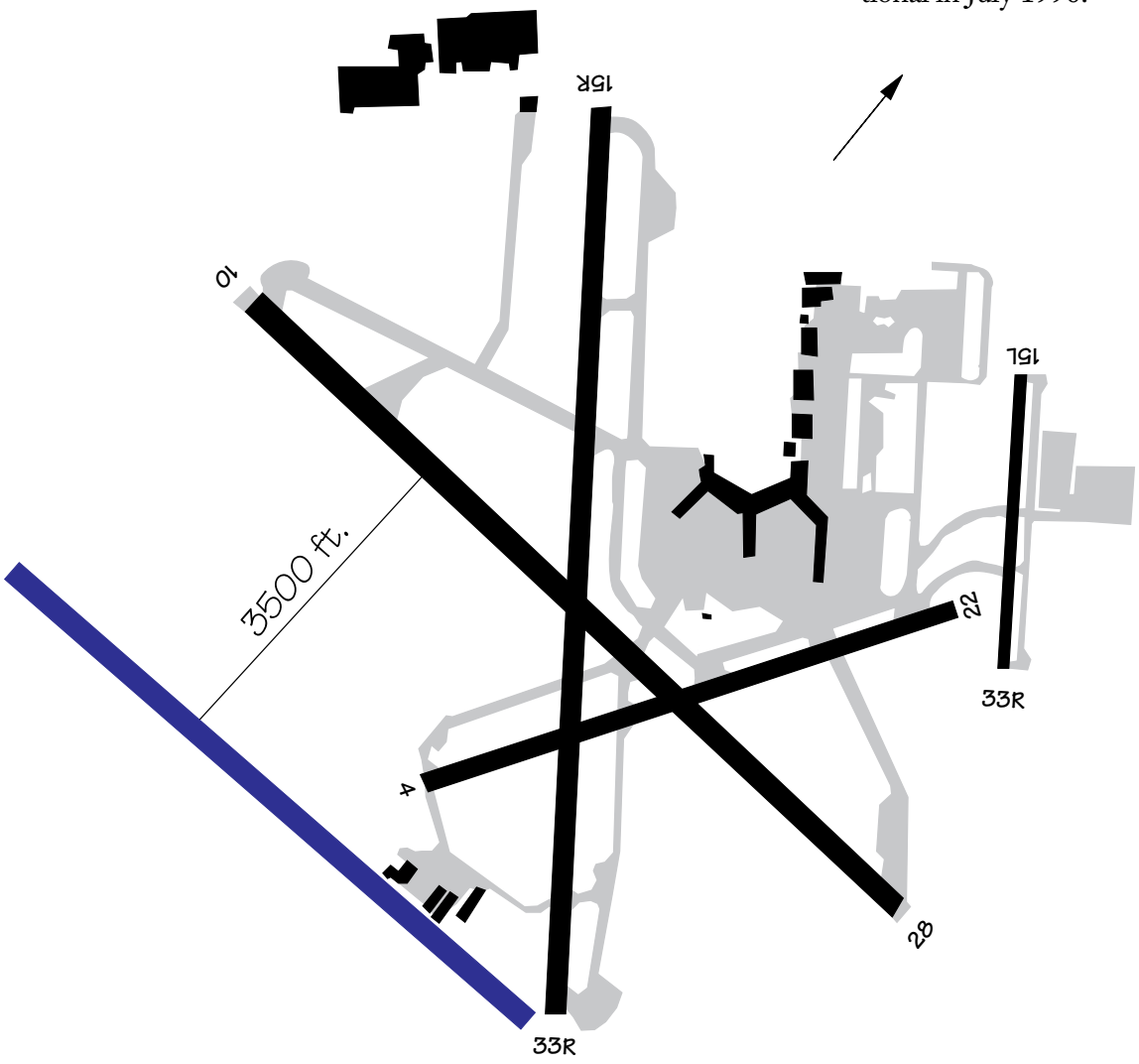
The community has approved the sale of revenue bonds for the development of a new airport. The environmental assessment for the new airport site has been approved. The present airport cannot be expanded. The new airport site will accommodate dual parallel runways that support simultaneous instrument approaches, which will potentially double the IFR arrival capacity from 26 (at Robert Mueller Airport) to 52 per hour. The cost of construction of Phase 1 of the new airport, including the land, terminal, and two runways, is $550 million. The estimated operational date is January 1997. Since Robert Mueller Airport will close upon completion of the new airport, no capacity enhancements are planned at Mueller.

Development activities have recently been suspended pending a decision by the Air Force regarding the closing of Bergstrom AFB. Should Bergstrom AFB close, it could potentially be available for development as a civil airport for the Austin area.

No layout of the new Austin airport was available at press time.

Baltimore-Washington (BWI)

A new 7,800-foot runway, Runway 10R/28L, will be constructed 3,500 feet south of Runway 10/28. Construction is expected to begin in 1994, and the runway is planned to be completed in 1996 at a cost of $38 million. When Runway 10R/28L is constructed, Runway 4/22 will convert to a taxiway. A runway extension of Runway 15L/33R to 5,000 feet long and 100 feet wide, was operational in July 1990.

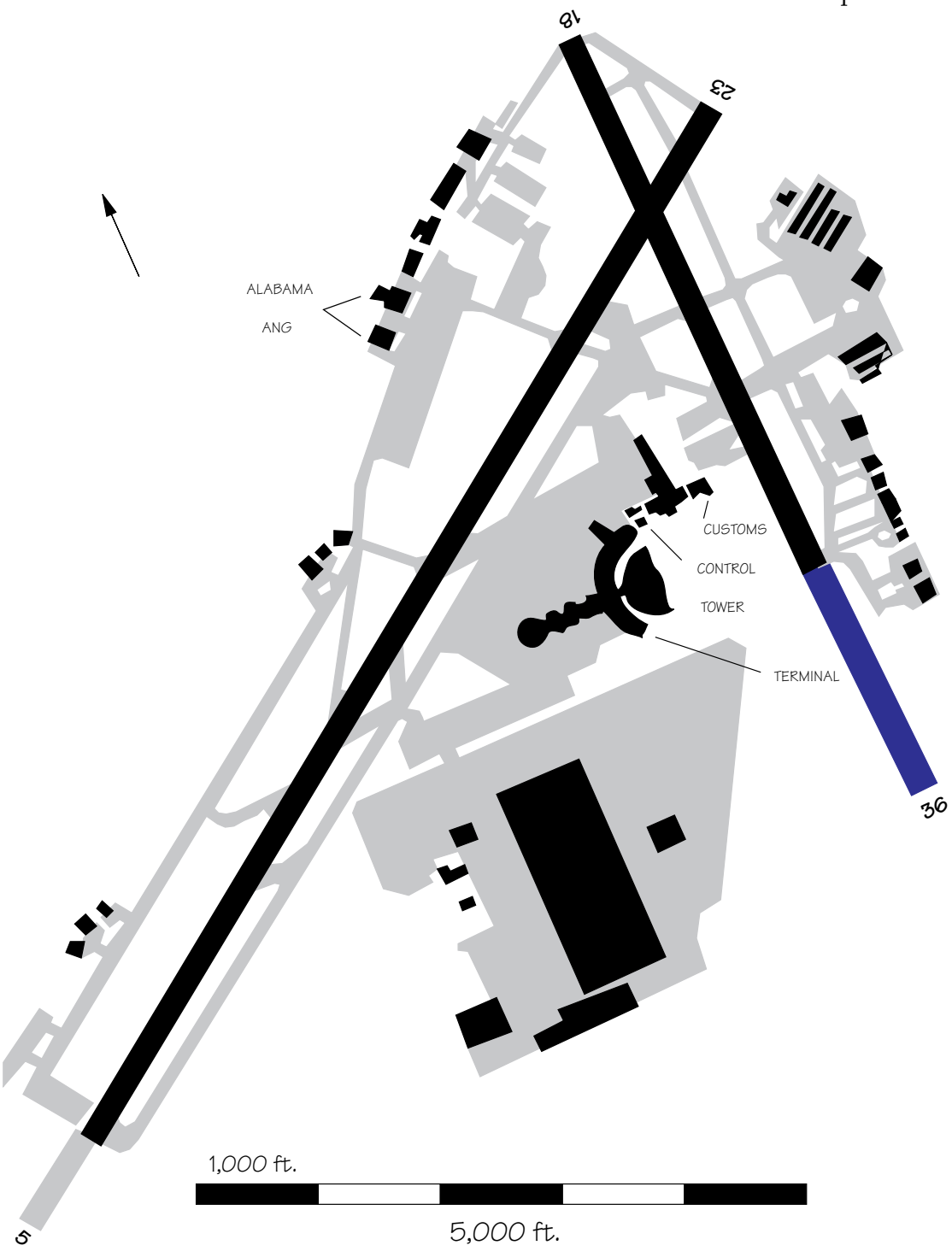


1,000 ft.

5,000 ft.

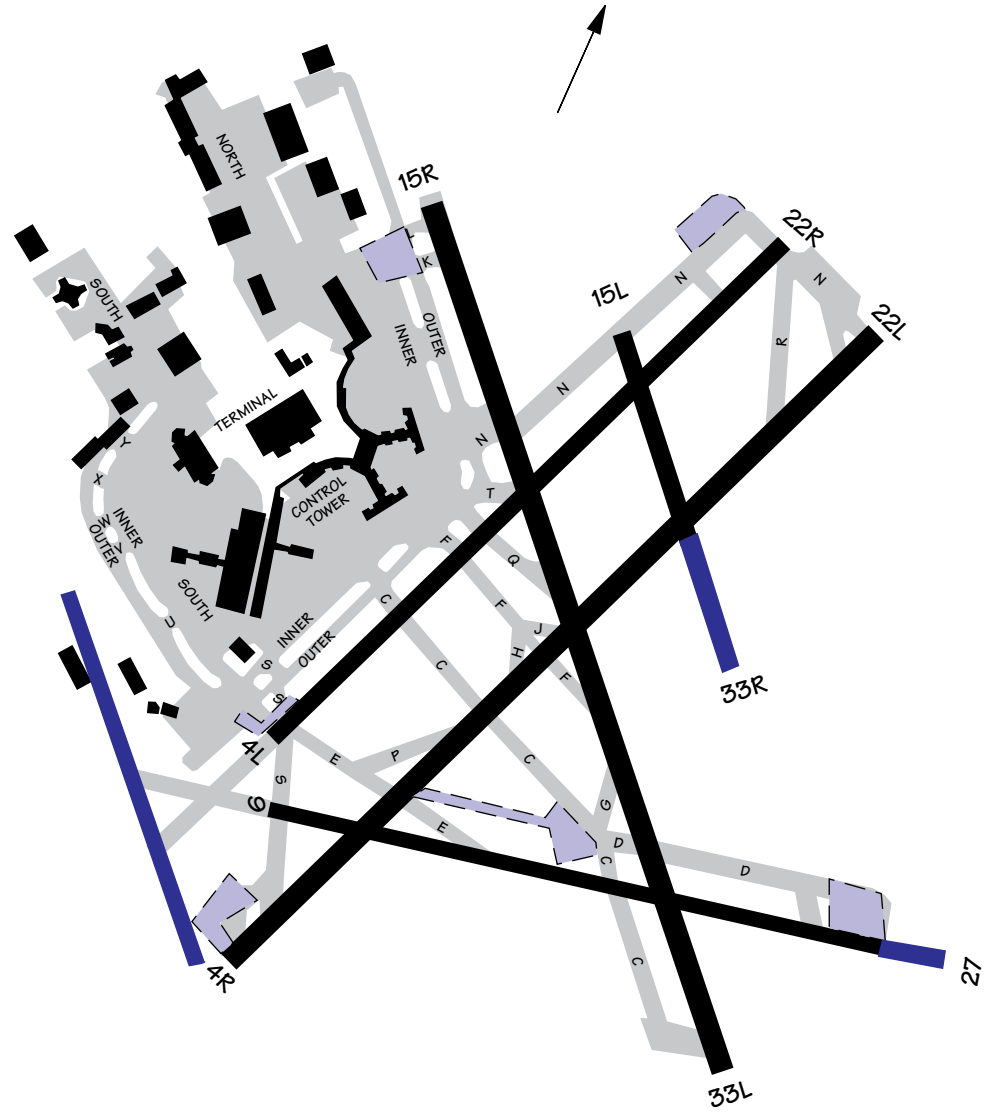
Birmingham (BHM)

Runway 18/36 will be extended from 4,800 feet to 7,500 feet. The environmental process was completed in May 1990. The estimated cost of construction is $42.5 million. The extension is expected to be completed in 1996.



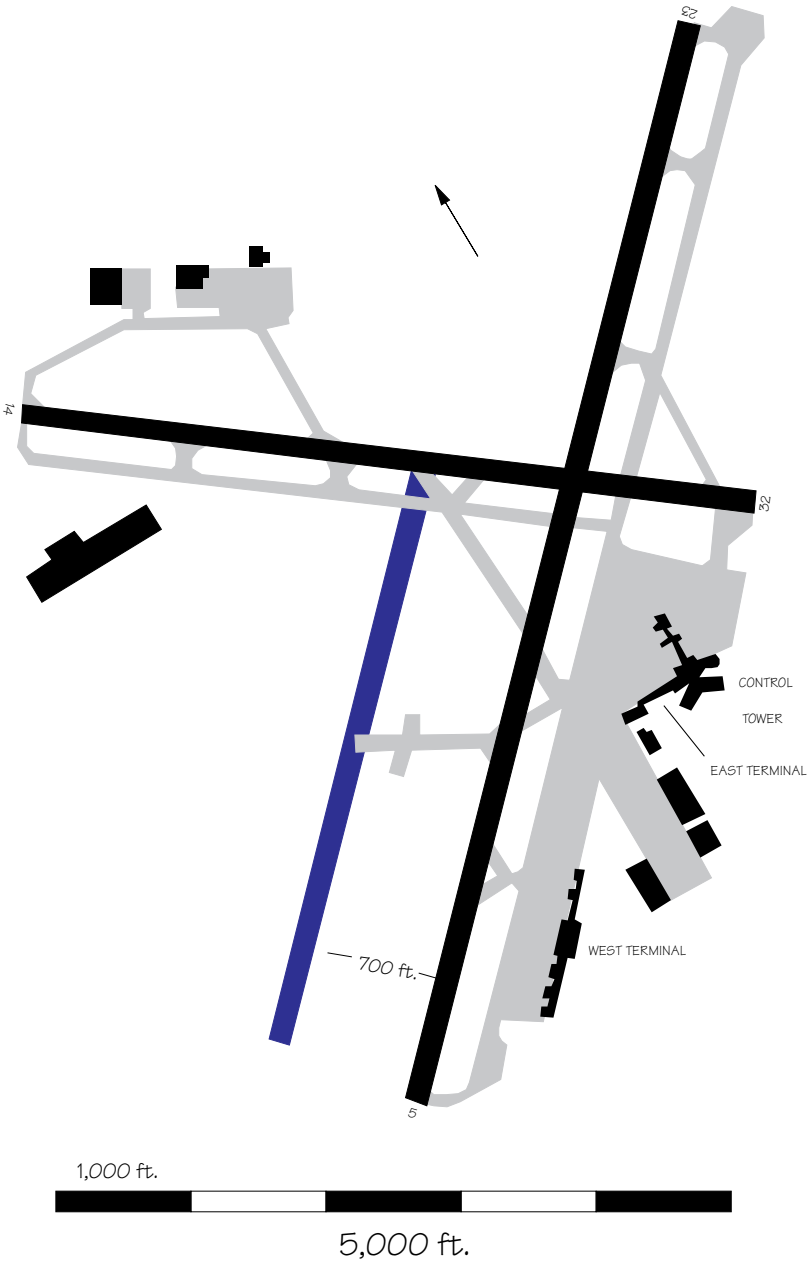
Boston (BOS)

A new Runway 14/32 and extension of Runway 15L/33R have been considered.



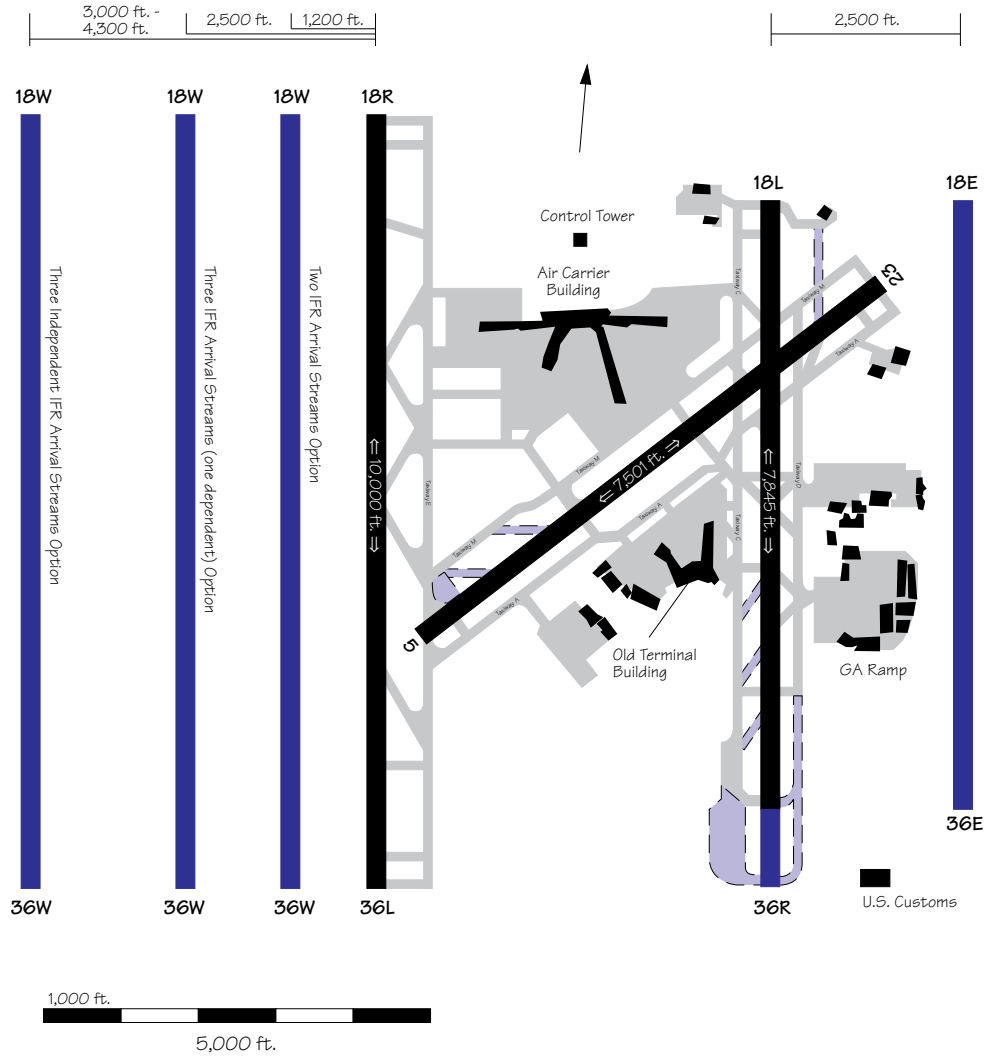
Buffalo (BUF)

Runway 14/32 is planned to be extended. Construction is expected to start in 1992 with completion estimated for 1993 at a cost of $4 million. A draft Master Plan shows a new parallel runway, Runway 5L/23R, 3,800 feet by 75 feet, located 700 feet northwest of Runway 5/23. It is planned for 1999-2000. No increase in IFR arrival capacity will be provided, but departure capacity will increase.



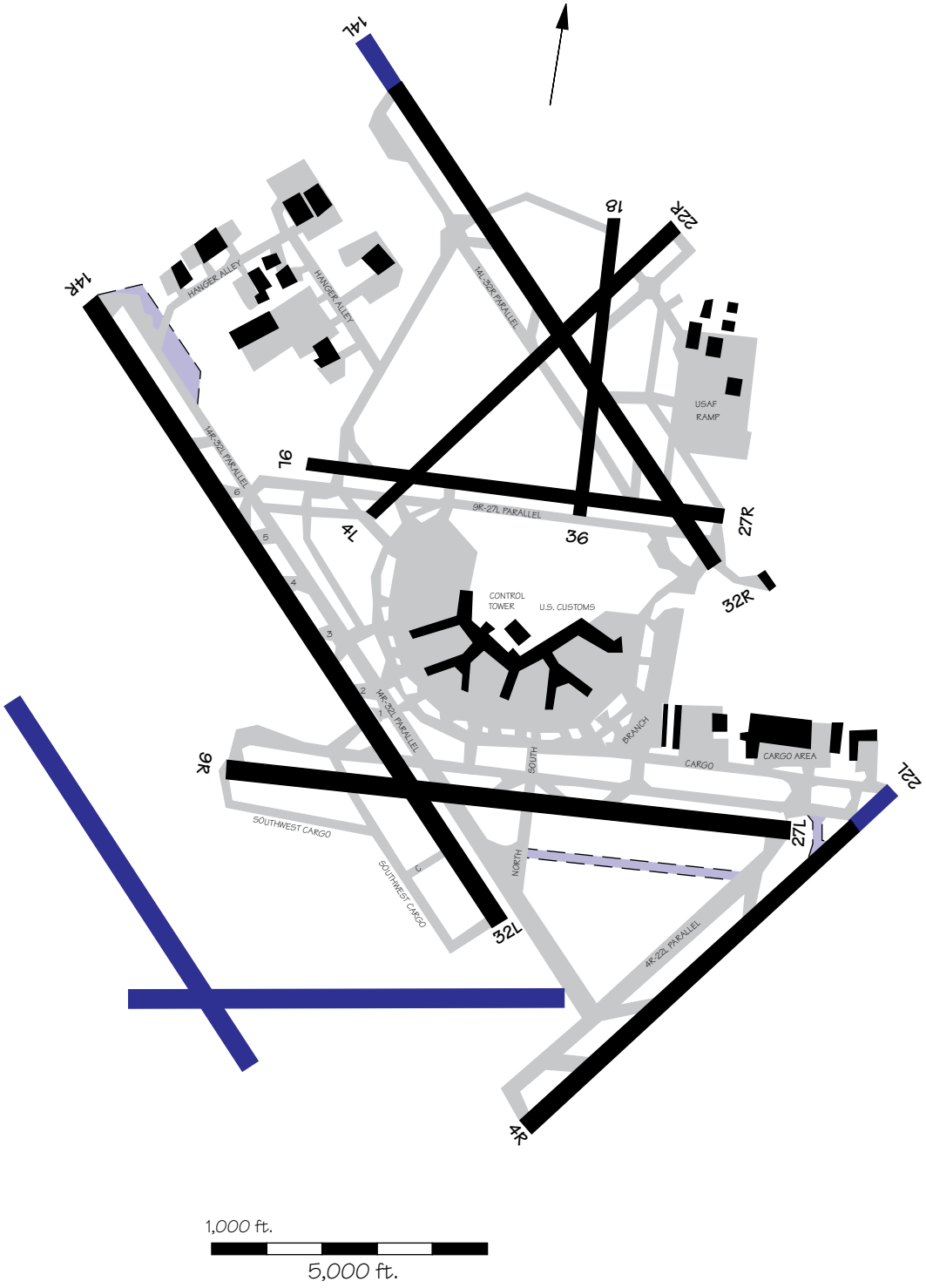
Charlotte (CLT)

Construction is scheduled to begin in October 1991 to extend Runway 36R 1,000 feet south to provide simultaneous approach capability during noise abatement hours. Completion is expected in 1993. A third parallel 8,000 foot runway west of Runway 36L is being planned to open in 1996 that would permit independent IFR arrivals. Construction is planned to start in 1993. The task force also recommended another parallel runway east of 18L/36R. Triple or quadruple IFR approaches could become available with the construction of this runway.



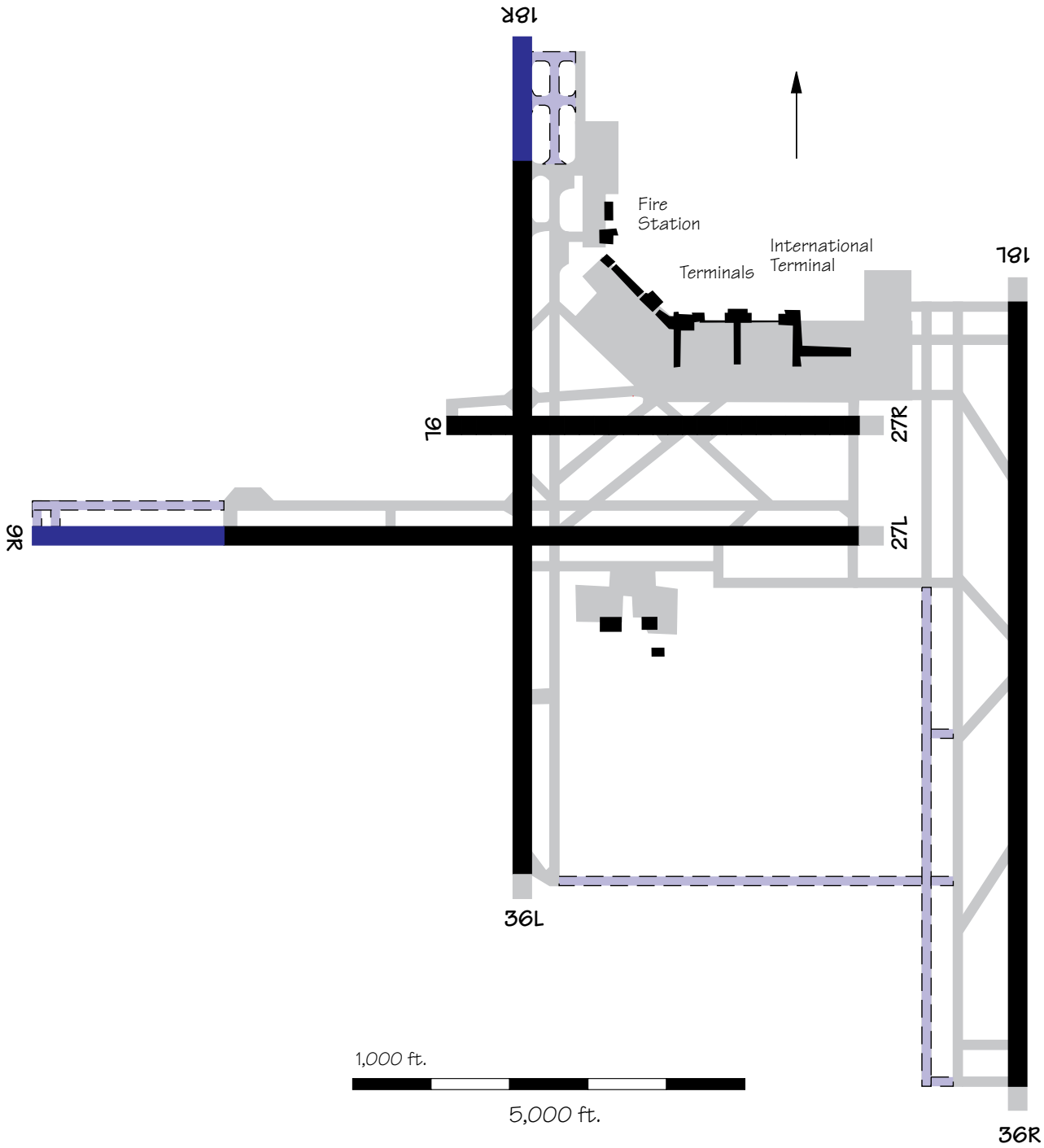
Chicago (ORD)

New Runways 9/27 and 14/32 have been recommended by the Chicago Airport Capacity Design Team.



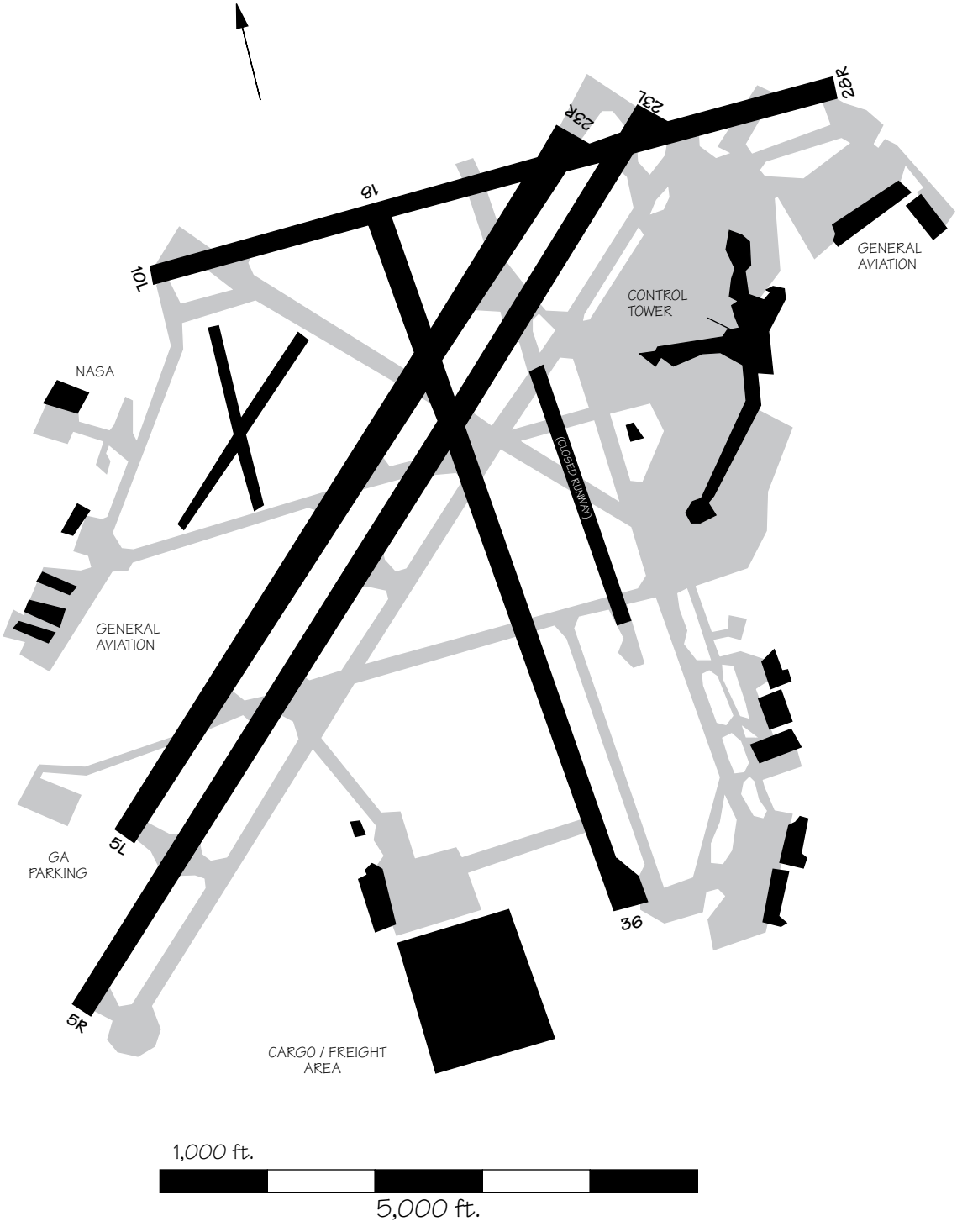
Cincinnati (CVG)

New Runway 18L/36R, parallel to and 6,200 feet away from Runway 18R/36L, became operational in January 1991. This runway provides the potential for independent IFR configurations, doubling IFR arrival capacity.



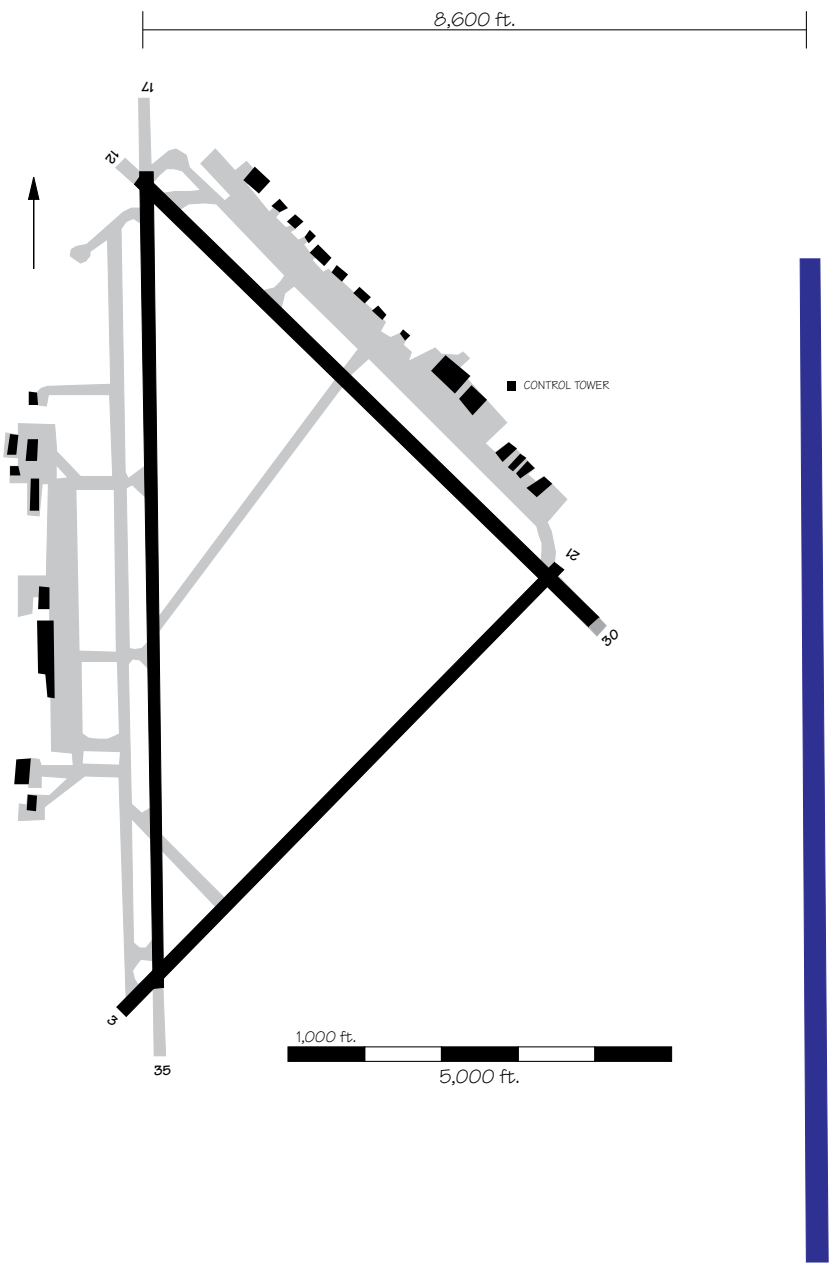
Cleveland (CLE)

The reconstruction of Runway 5R/23L began on 23 April 1990. It was completed in November 1990 at a total construction cost of $16.5 million.

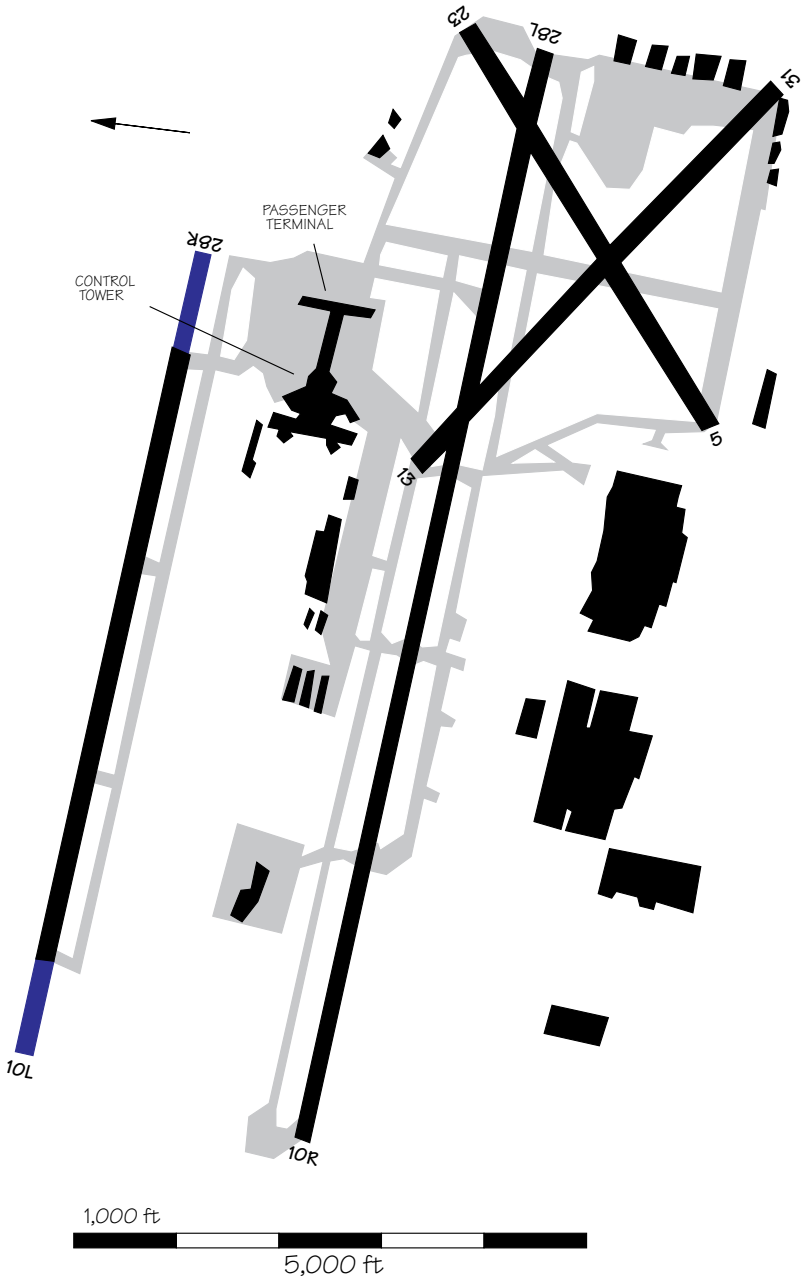


Colorado Springs (COS)

Runway 17L/35R will be constructed 8,600 feet east of existing Runway 17/35. This should permit two instrument approaches during IFR conditions, doubling arrival capacity. Construction began in 1990. The runway is scheduled to be operational in 1992, at a construction cost of $38 million.

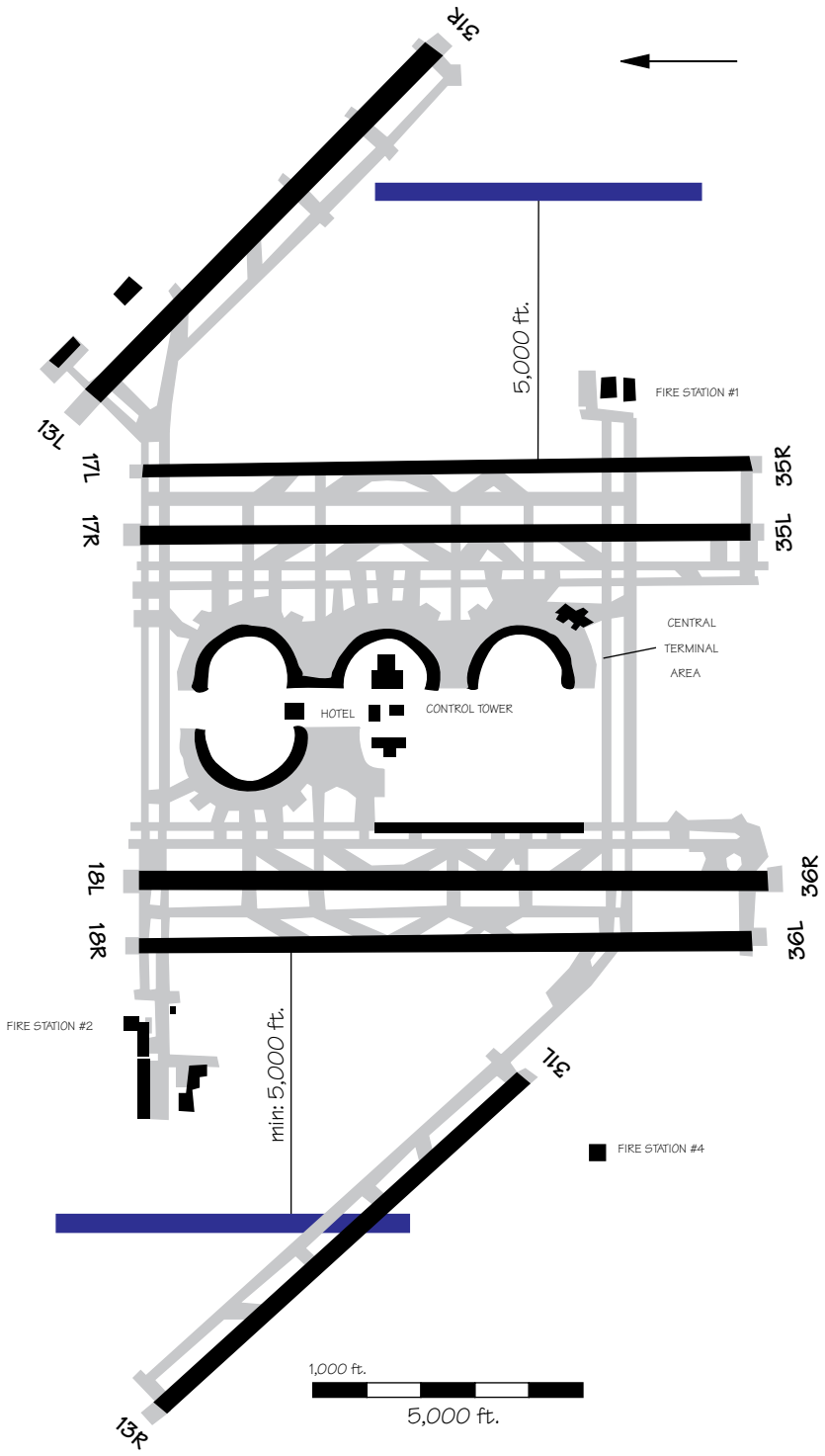


Columbus (CMH)



An update to the current ALP is being coordinated. It includes 1,000-foot extensions to each end of Runway 10L/28R. Construction on the extension to Runway 10L is expected to begin in 1994 and should be completed in 1995. The estimated cost of construction is $8.1 million. The extension to Runway 28R is expected to begin in early 1994, and be operational late that year. The estimated cost of construction of this extension is $3.2 million.

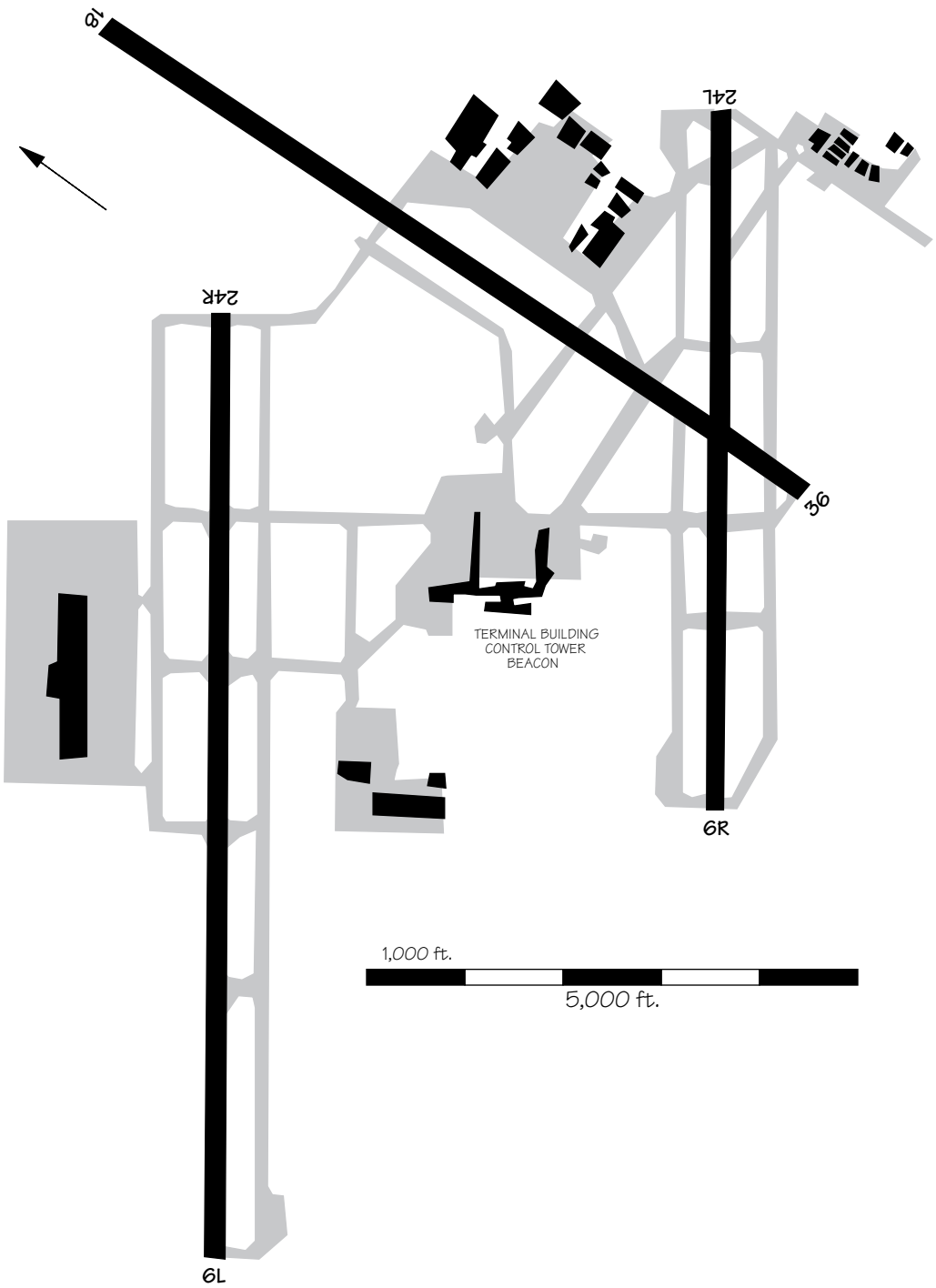
Dallas-Fort Worth (DFW)



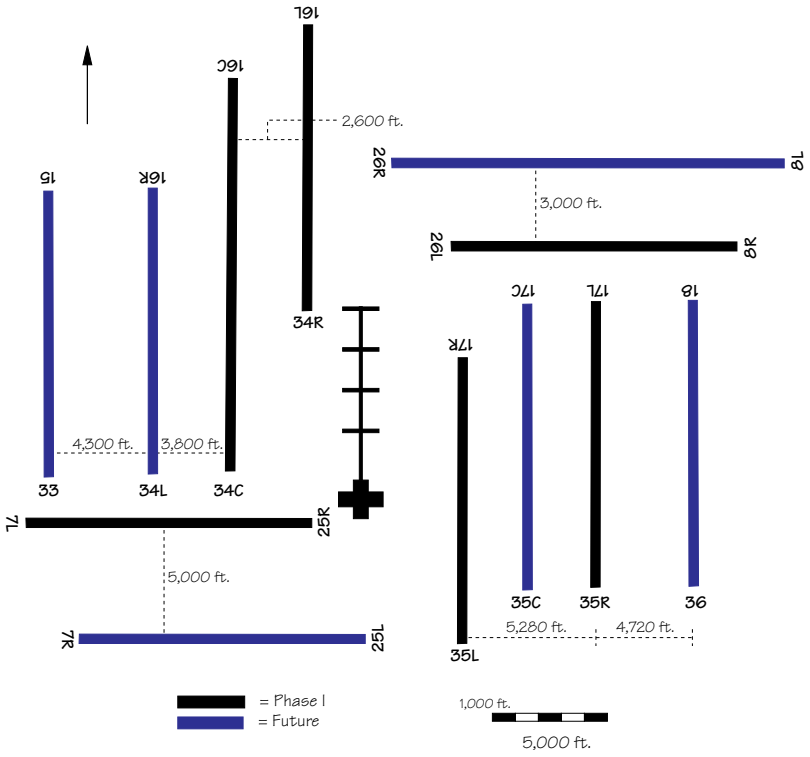
Planned 2,000-foot extensions to Runways 35L and 36R will provide an overall length of 13,400 feet for each. Each extension is estimated to cost $24 million. The tentative date of completion of Runway 35L is 1992 with Runway 32R scheduled to start construction in late 1993. Also planned are two more parallel runways, Runway 16L/34R and Runway 16R/34L. The east runway, Runway 16L/34R, encompasses a two-stage action. Initially, a 6,000-foot runway will be constructed for ultimate phased extension to 8,500 feet. It will be located 5,000 feet east of and parallel to Runway 17L/35R. The estimated cost is $100 million. It is anticipated that the 6,000-foot runway will be operational by 1993. Construction on the west runway, Runway 16R/34L, should begin in 1993 and is expected to be completed in 1997. The estimated cost is $95 million. It will be located west of Runway 18R/36L. These runways could potentially permit triple or quadruple IFR arrival operations (78 and 104 hourly IFR arrivals, respectively) if the multiple approach concepts are approved.

Dayton (DAY)

A Master Plan shows an extension of Runway 6L/24R to 11,000 feet to accommodate overseas departures.

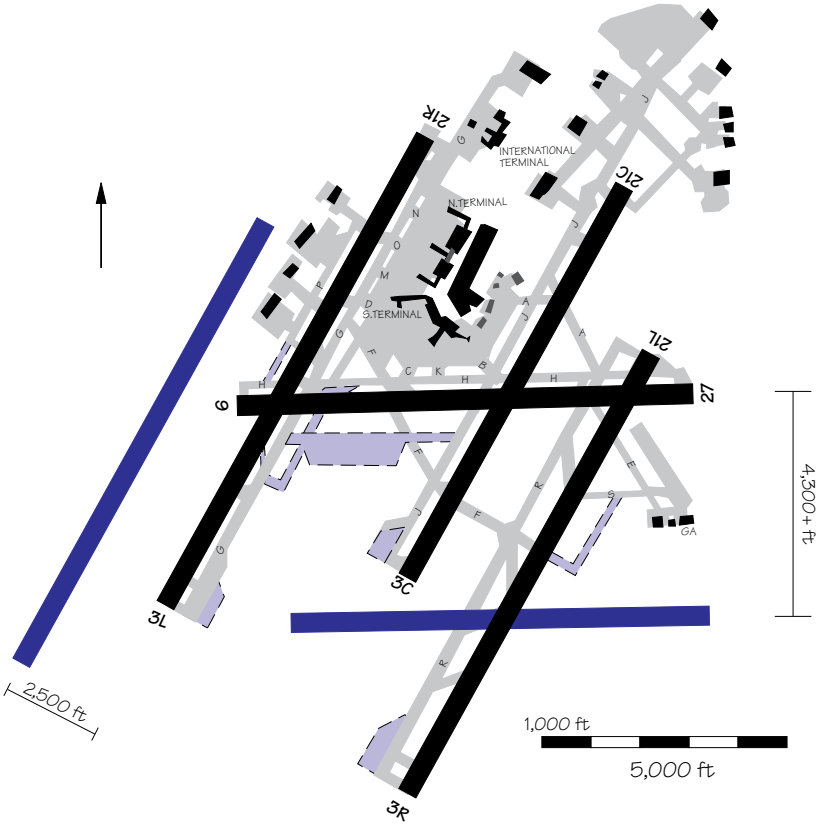


New Denver (DVX)



The initial phase of the new Denver airport will consist of six runways. The current plan involves four north-south parallels and two east-west parallels. Runway 17C/35C will initially be the farthest west of the four north-south parallels. It will be located 3,100 feet west of Runway 16L/34R and 10,700 feet west of Runway 17R/35L. Runway 17R/35L and Runway 18L/36R will be separated by 5,700 feet. East-west parallels, Runways 7L/25R and 8R/26L, will have centerlines 13,500 feet apart. Runway 7L/25R is south of Runways 16C/34C and 16L/34R. Runway 8R/26L is north of Runways 18R/36L and 18L/36R. Construction began in late 1989. The total estimated cost of construction is $2.5 billion. The new airport is expected to be operational in October 1993. The airport could potentially operate independent triple or quadruple IFR approaches, if approved (quadruple approaches under this configuration would require one dependent pair or use of the PRM). This could increase Denver hourly IFR arrival capacity from 52 to 78 (triples) or more (quadruples) per hour. A second future phase proposes the construction of six more runways.

Detroit (DTW)



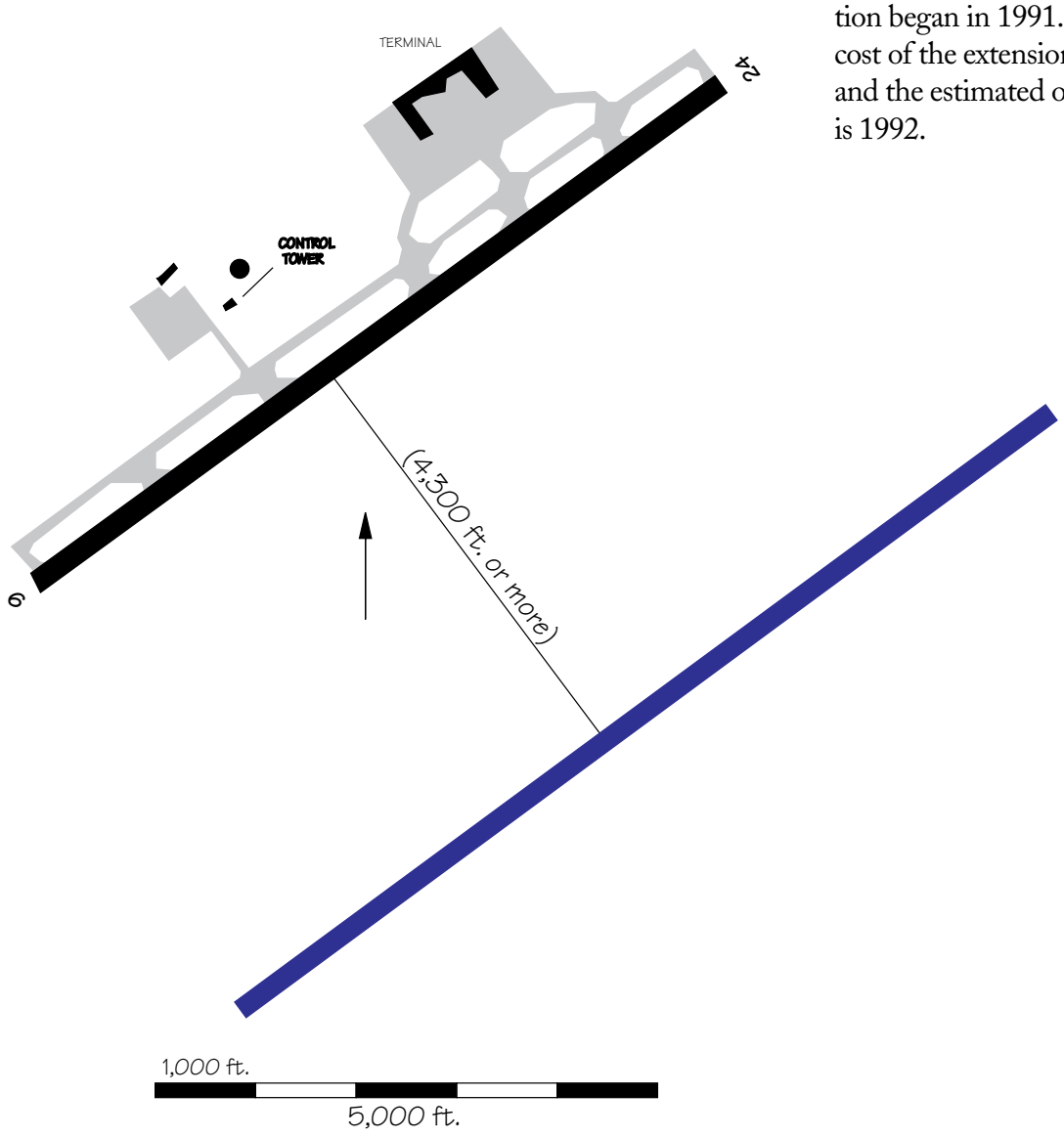
Runway 9R/27L is planned, located more than 4,300 feet from and parallel to existing Runway 9/27. The estimated cost is $69.1 million. This new runway will allow DTW to run independent parallel IFR approaches in an east-west configuration, thus matching its current north-south IFR arrival capabilities. Construction is to begin in 1991 and should be completed in late 1992. A fourth north-south parallel, Runway 4/22, 2,500 feet west of Runway 3L/21R, is also planned. Construction is expected to begin in 1994 and should be completed in 1995. The estimated cost of construction is $58.2 million. This runway could potentially permit triple IFR arrivals with one dependent and one independent pairing. If approved, hourly IFR arrival capacity could increase from 52 to 63. An environmental assessment was submitted in September 1989, and a record of decision was issued in March 1990 for all three projects.

Fort Lauderdale (FLL)

An extension of the short parallel Runway 9R/27L to 6,000 feet by 150 feet is planned to provide the airport with a second parallel air carrier runway. Construction is expected to begin in 1994. The estimated cost of construction is $26 million, and the anticipated operational date is 1995. Extension of this short parallel runway would permit IFR arrival capacity to increase from 26 to 52 per hour in an independent parallel operation.

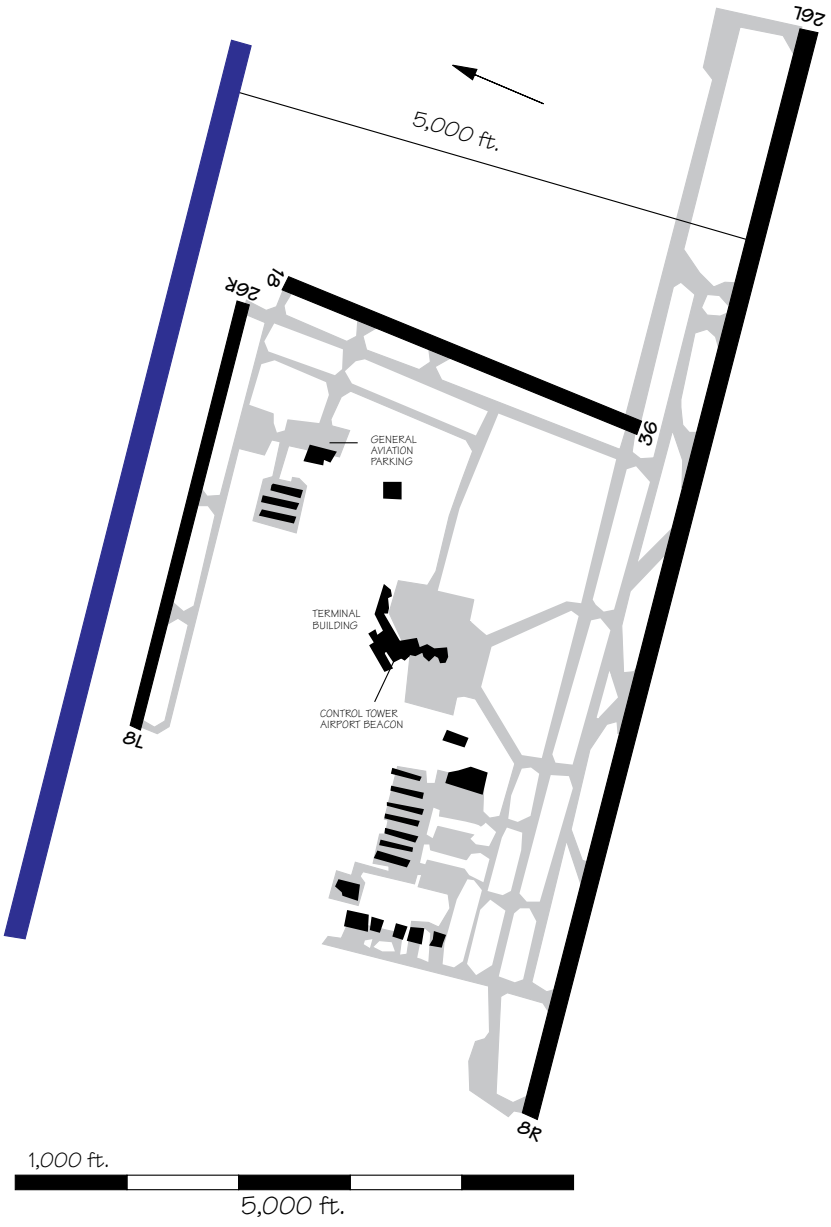
Fort Myers (RSW)

Planning has begun for a 9,000-10,000 foot new parallel runway, Runway 6R/24L, 4,300 feet or more from the existing air carrier runway. Construction is expected to begin in 1996. It is estimated to be operational by 1999 at a cost of $123 million. This would provide independent parallel operations with potential to increase IFR hourly arrival capacity from 26 to 52. An environmental assessment is underway for an extension of Runway 6/24 from 8,400 feet to 10,600 feet. Construction began in 1991. The estimated cost of the extension is $10 million and the estimated operational date is 1992.



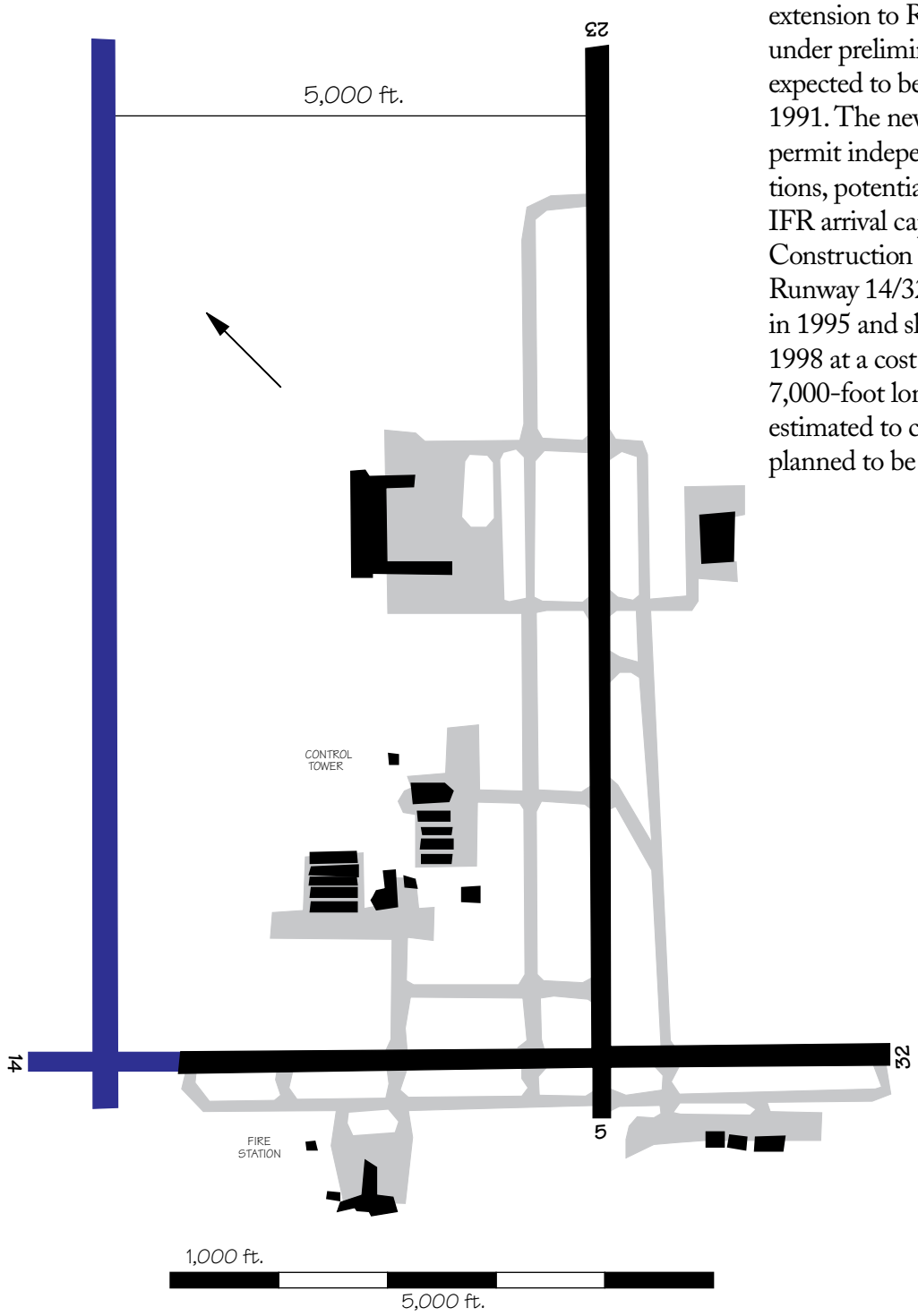
Grand Rapids (GRR)

A new 7,000-foot parallel runway, Runway 8L/26R, 5,000 feet from Runway 8R/26L, is being considered. The current 3,918 foot Runway 8L/26R would become a taxiway. An environmental assessment is underway and is expected to be submitted in November 1991. Construction is scheduled to start in 1993 and should be completed by late 1994. The estimated cost of construction is $25 million. This runway will potentially double hourly IFR arrival capacity from 26 to 52.



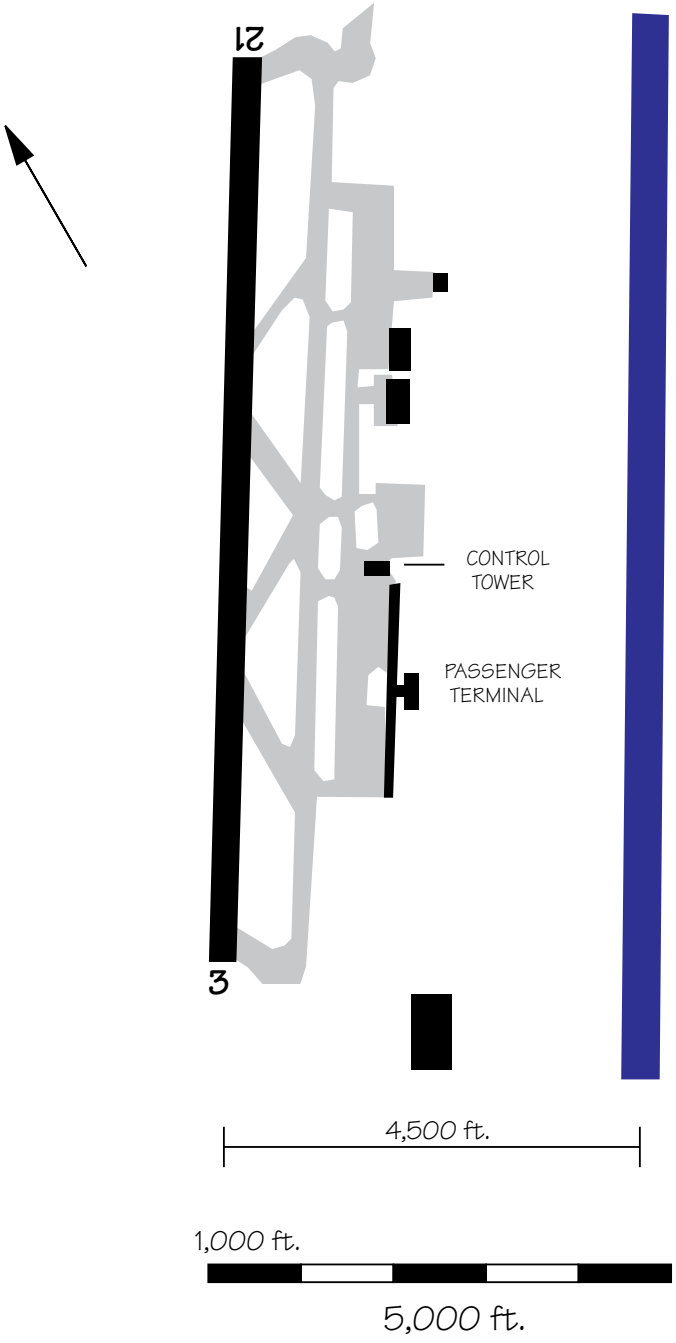
Greensboro (GSO)

An airport layout plan shows a new parallel Runway 5/23, 5,000 feet northwest of the existing Runway 5/23, and a 1,200 foot extension to Runway 14/32 is under preliminary review and is expected to be approved in late 1991. The new runway would permit independent parallel operations, potentially doubling hourly IFR arrival capacity from 26 to 52. Construction on the extension to Runway 14/32 is expected to begin in 1995 and should be completed in 1998 at a cost of $14 million. The 7,000-foot long parallel runway is estimated to cost $20 million. It is planned to be completed in 2010.



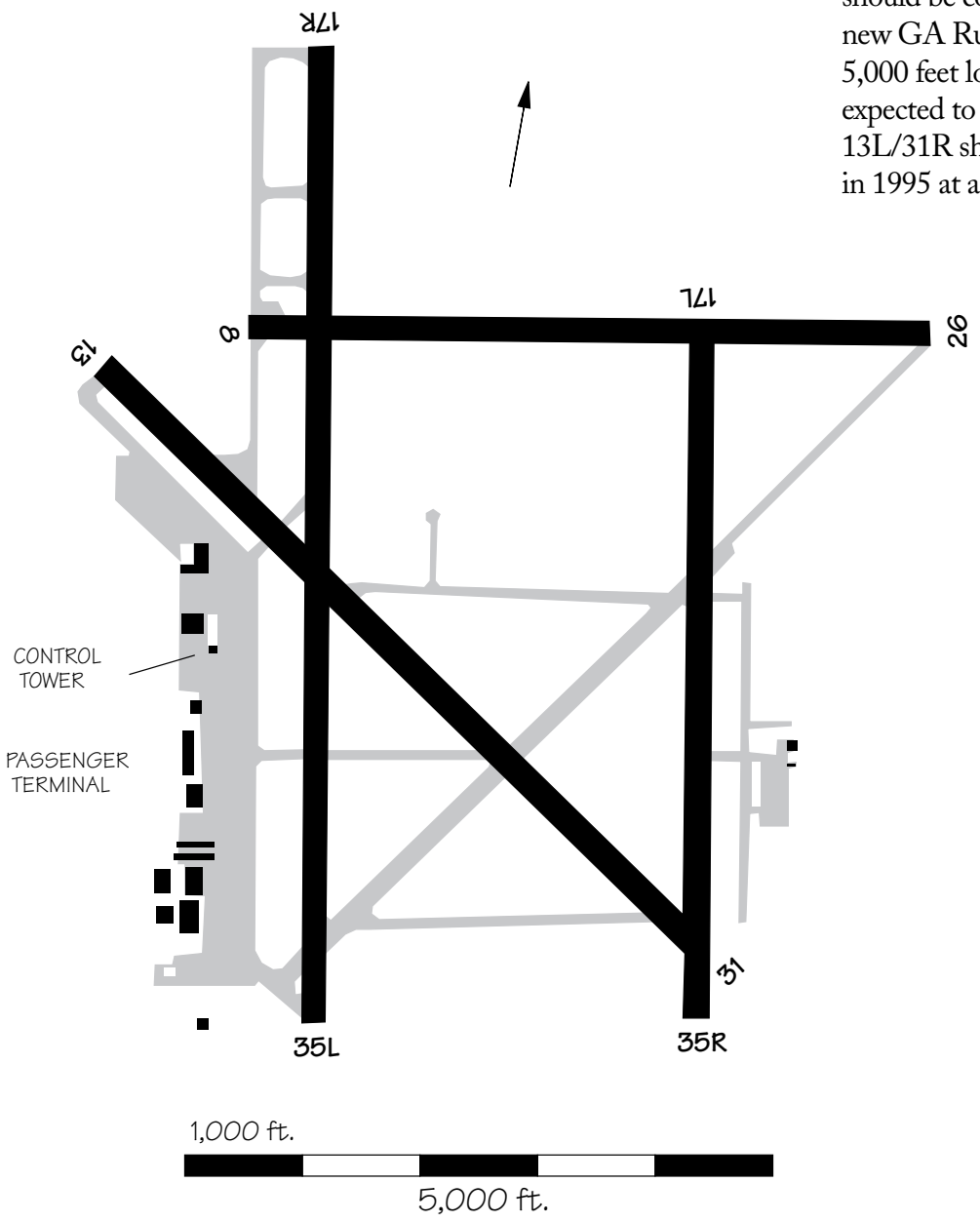
Greer Greenville-Spartanburg (GSP)

A new parallel runway, Runway 3R/21L, is anticipated in 1995 at a cost of $25 million. Presently, its planned length is 5,900 feet with a 4,500 foot separation from Runway 3/21. This would potentially double hourly IFR arrival capacity from 26 to 52.



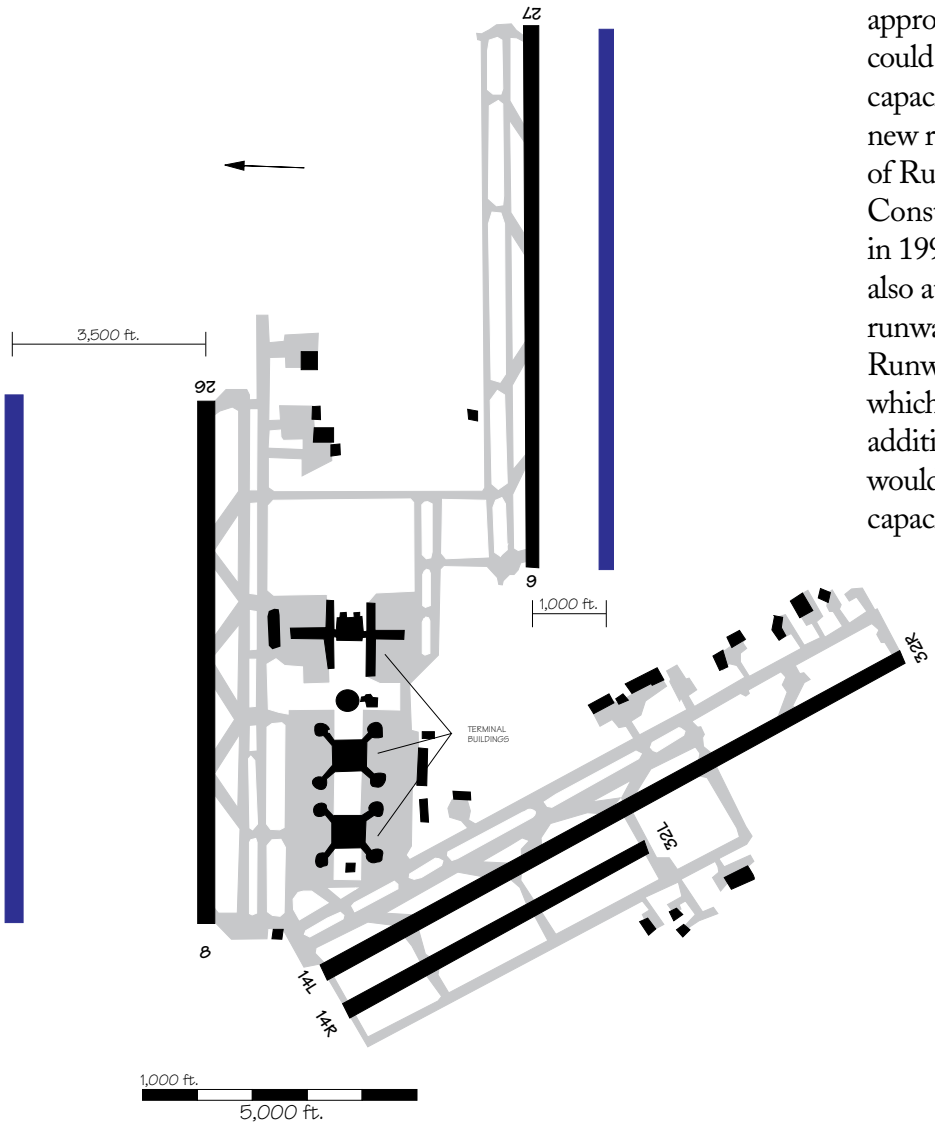
Harlingen (HRL)

An approved airport layout plan is anticipated in late 1991, which will include an extension to Runway 13/31 and a new parallel GA runway, Runway 13L/31R. The extension to Runway 13/31 will bring the runway length to 9,500 feet at an estimated cost of $6.7 million. A noise study and environmental assessment are expected in 1992. Construction is anticipated to begin in 1994 and should be completed in 1995. The new GA Runway 13L/31R will be 5,000 feet long. Construction is expected to begin in 1994. Runway 13L/31R should also be operational in 1995 at a cost of $5 million.



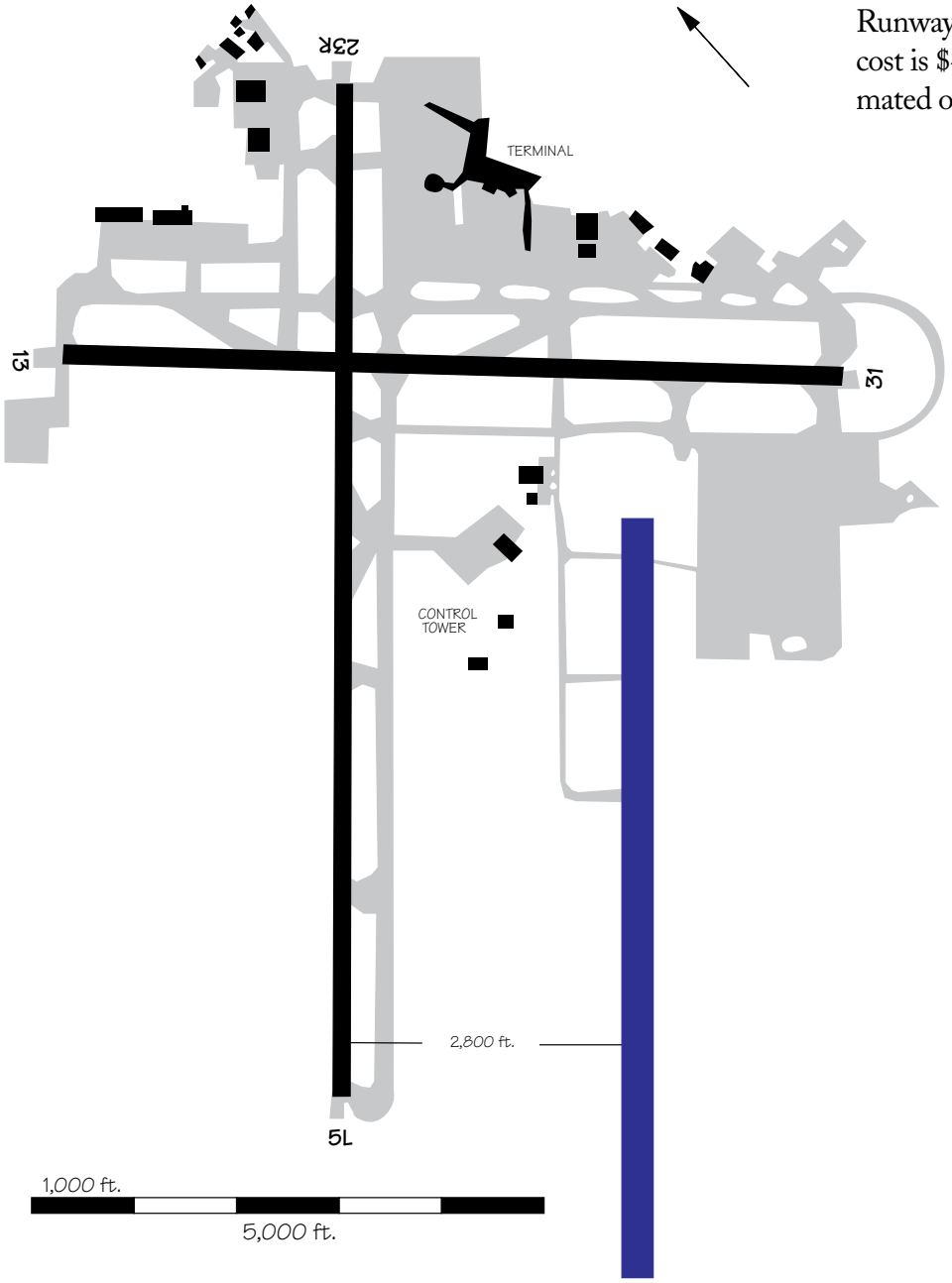
Houston (IAH)

An $8 million, 2,000 foot extension to Runway 14R/32L is planned to be operational in 1997. Construction is expected to begin in 1996 with completion in 1997. A new runway, Runway 8L/26R, is planned to be completed sometime in 1999. Construction should begin in 1997 and is estimated to cost $44 million. This runway will be parallel to and north of existing Runway 8/26. The spacing between these two runways will be 3,500 feet. Runway 8L/26R, in conjunction with Runways 9/27 and 8/26, has the potential for allowing triple IFR approaches, if approved, which could increase hourly IFR arrival capacity from 52 to 78. Another new runway, parallel to and south of Runway 9/27 is also planned. Construction is expected to begin in 1999 and be completed in 2002, also at a cost of $44 million. This runway will be separated from Runway 9/27 by only 1,000 feet, which, while not supporting additional IFR arrival capacity, would increase available departure capacity.



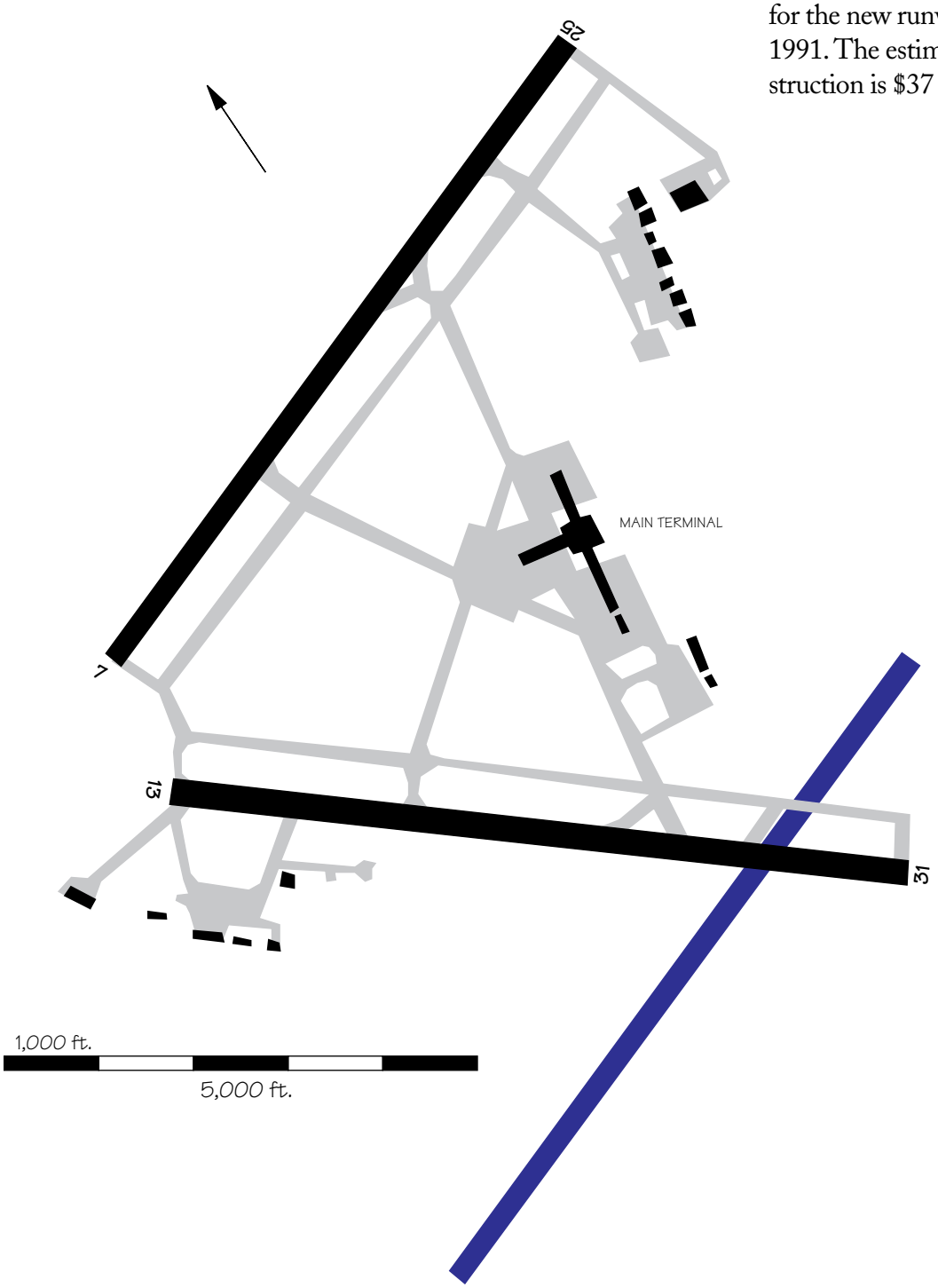
Indianapolis (IND)

A new runway, Runway 5R/23L, parallel to and 2,800 feet away from the existing Runway 5L/23R, became operational in July 1990. The runway dimensions are 10,000 feet by 150 feet. A CAT I ILS was installed in December 1990. This will permit dependent parallel operations, increasing hourly IFR arrival capacity from 26 to 36. Construction is scheduled to begin in 1993 for a replacement for Runway 5L/23R. The estimated cost is $42 million and the estimated operational date is 1996.



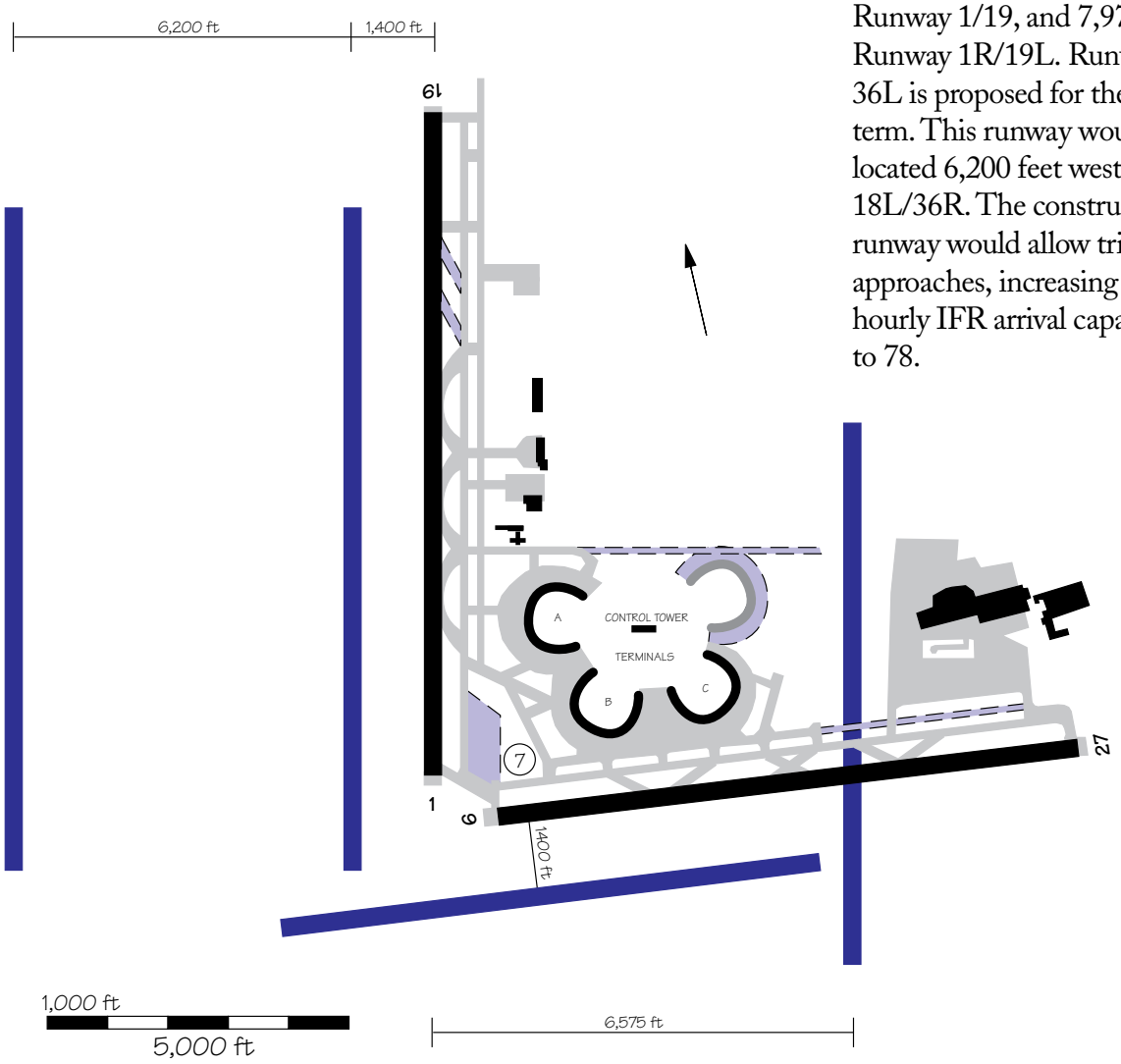
Jacksonville (JAX)

Runway 7R/25L is planned. It will be 6,500 feet south of the existing Runway 7/25, permitting independent parallel IFR operations and potentially doubling Jacksonville's hourly IFR arrival capacity. Plans and specifications for the new runway will start in 1991. The estimated cost of construction is $37 million.



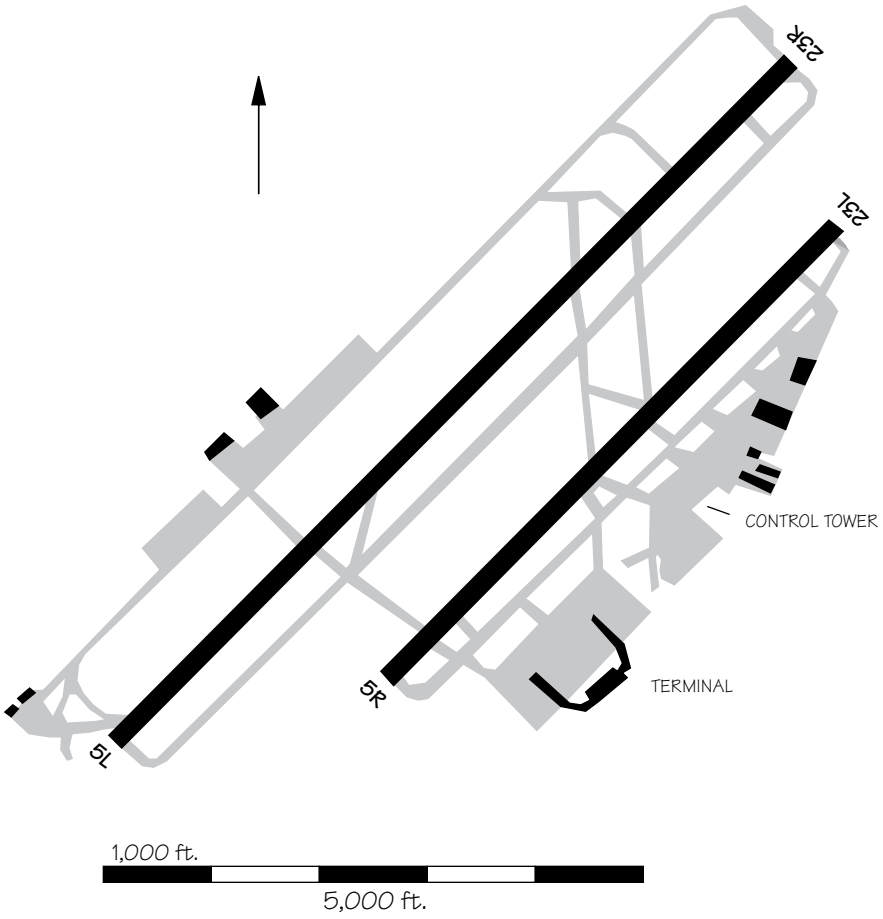
Kansas City (MCI)

A new north-south parallel runway, Runway 1R/19L, is currently under construction. It will be located 6,575 feet east of existing Runway 1/19, permitting independent parallel IFR operations. Construction began in October 1989 and should be completed in 1992. The estimated cost of construction is $46.2 million. A new runway, Runway 9R/27L, is proposed to be located 1,400 feet south of existing Runway 9/27. Runway 18L/36R is proposed to be constructed after 2000. This runway will be 1,400 feet away, parallel to and west of existing Runway 1/19, and 7,975 feet from Runway 1R/19L. Runway 18R/36L is proposed for the longer term. This runway would be located 6,200 feet west of Runway 18L/36R. The construction of this runway would allow triple IFR approaches, increasing average hourly IFR arrival capacity from 52 to 78.



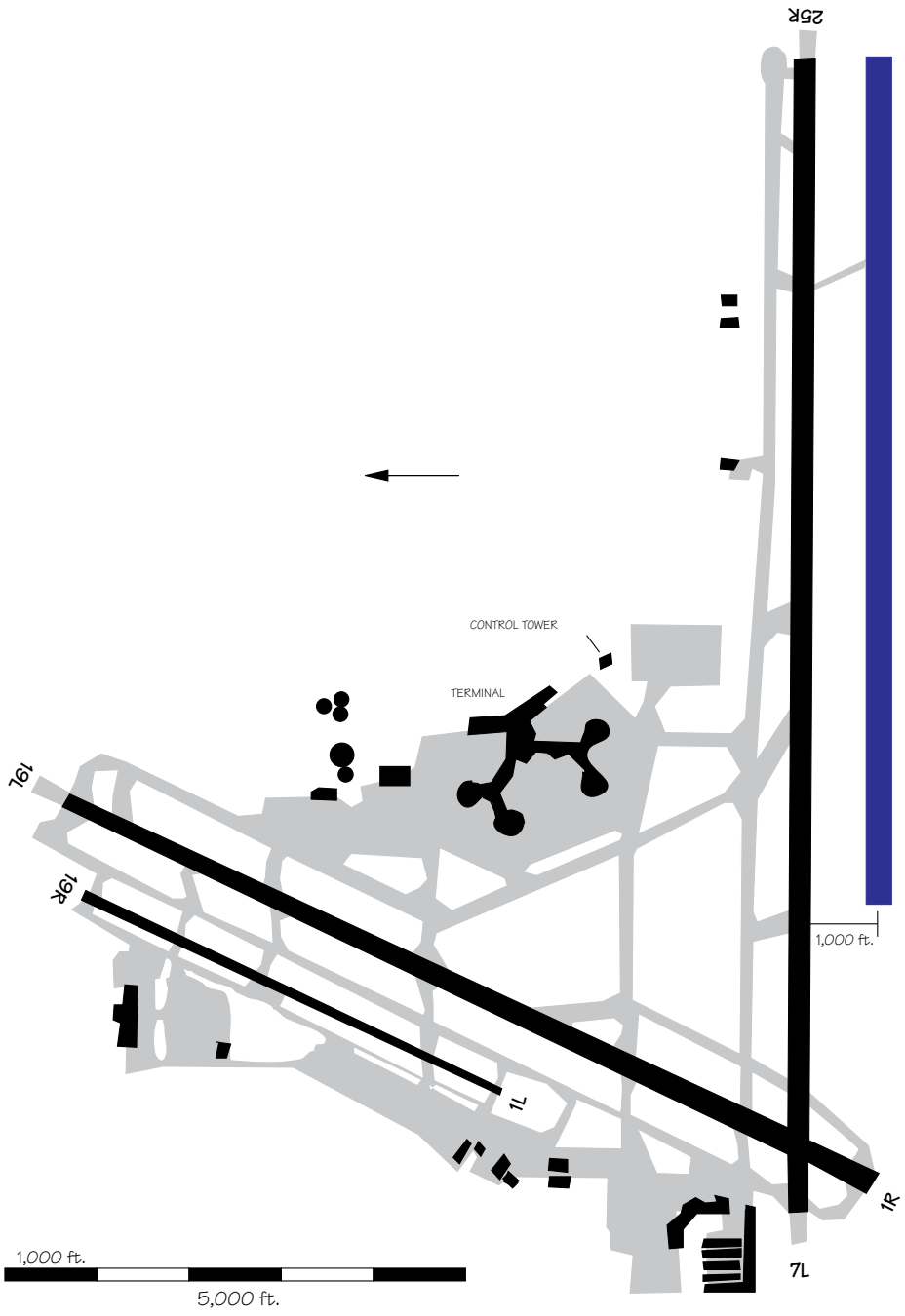
Knoxville (TYS)

A 3,000 foot extension of Runway 5R/23L from 6,000 to 9,000 feet is under multi-year grant. Construction began in June 1989. The projected date of commissioning is 1992. The estimated cost of construction is $17.4 million.



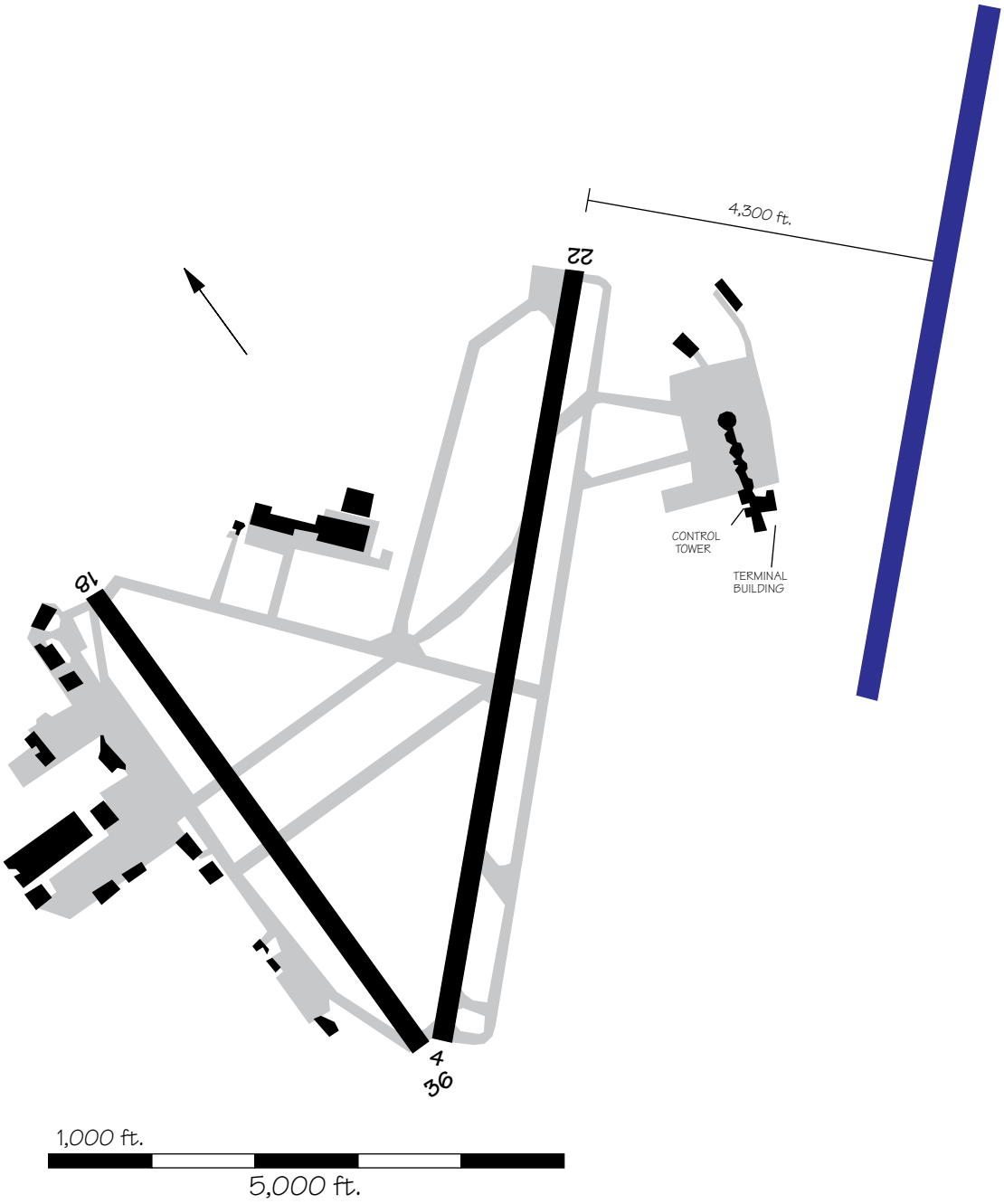
Las Vegas (LAS)

A new 8,900-foot runway, Runway 7R/25L, was constructed parallel to and 1,000 feet south of Runway 7/25. Construction began in 1990. The runway became operational in January 1991. While this will increase departure capacity, no increase in hourly IFR arrival capacity is provided.



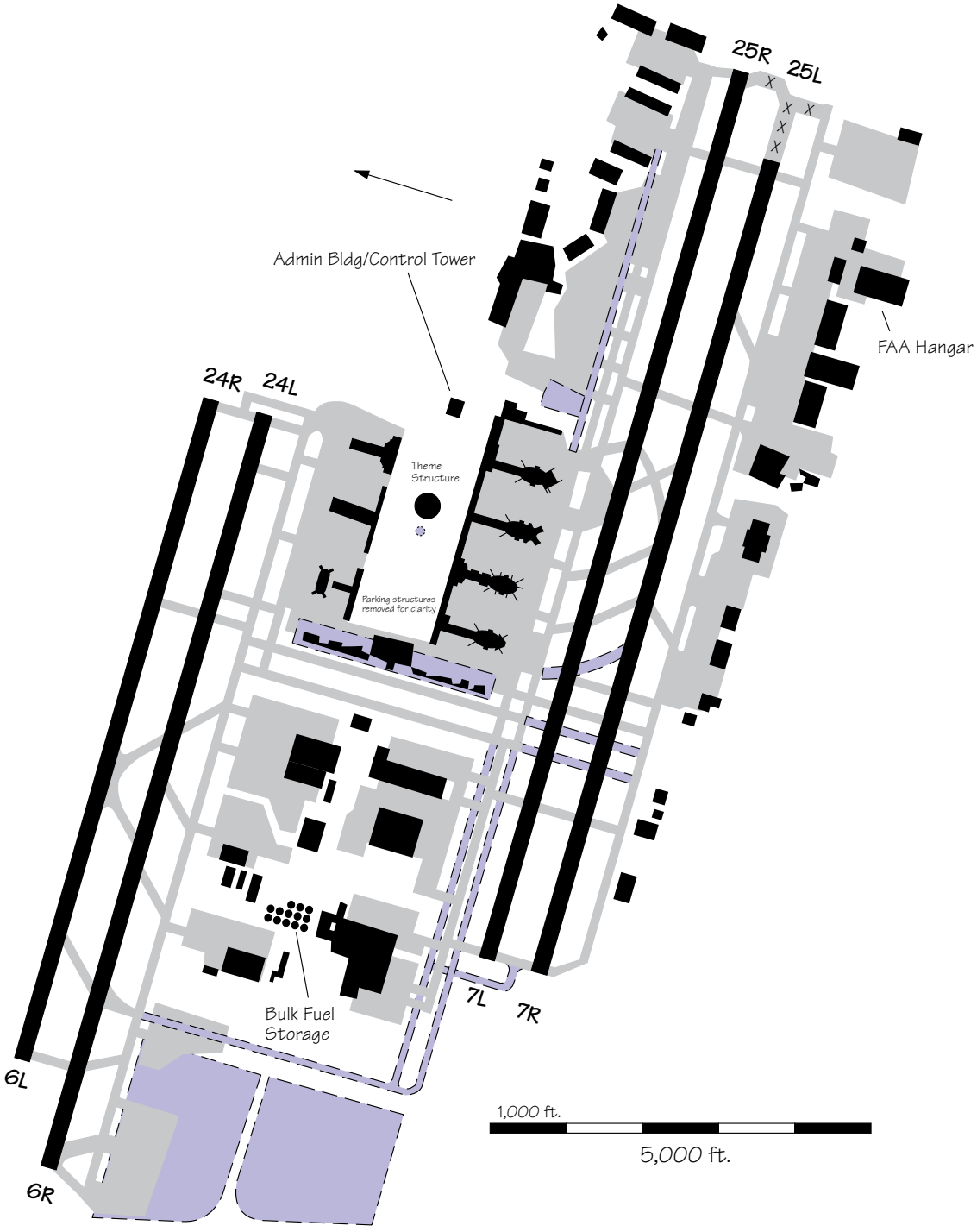
Little Rock (LIT)

Parallel runway 4R/22L, separated from Runway 4/22 by 4,300 feet, became operational in May 1991. This should allow independent parallel IFR operations, increasing hourly IFR arrival capacity from 26 to 52.



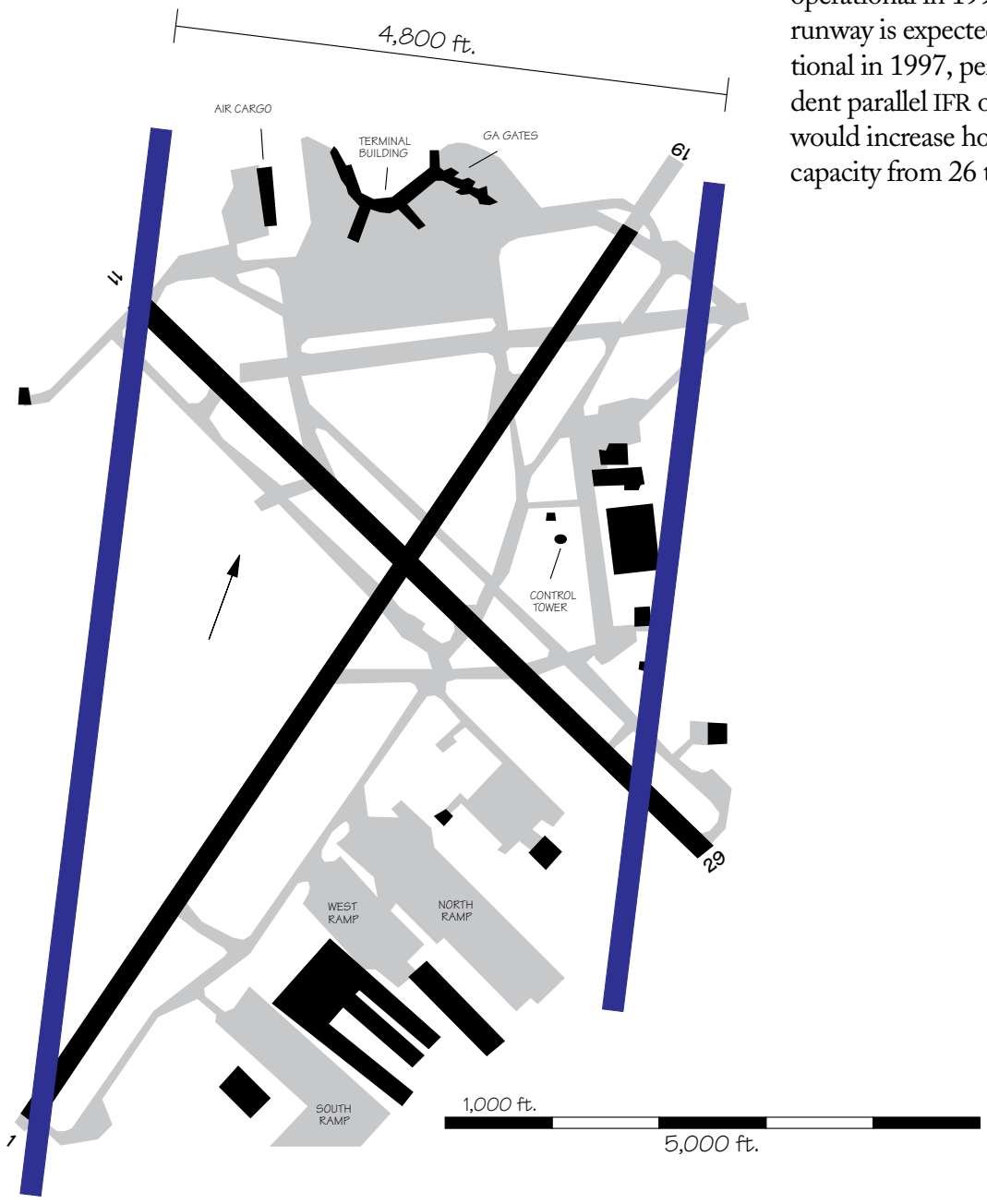
Los Angeles (LAX)

Runway 6L/24R is planned to be extended 1,360 feet to the west, to a length of 10,285 feet. This will improve the take-off capability of Runway 24R to equal that of Runway 24L. The estimated cost of construction is approximately $4 million.



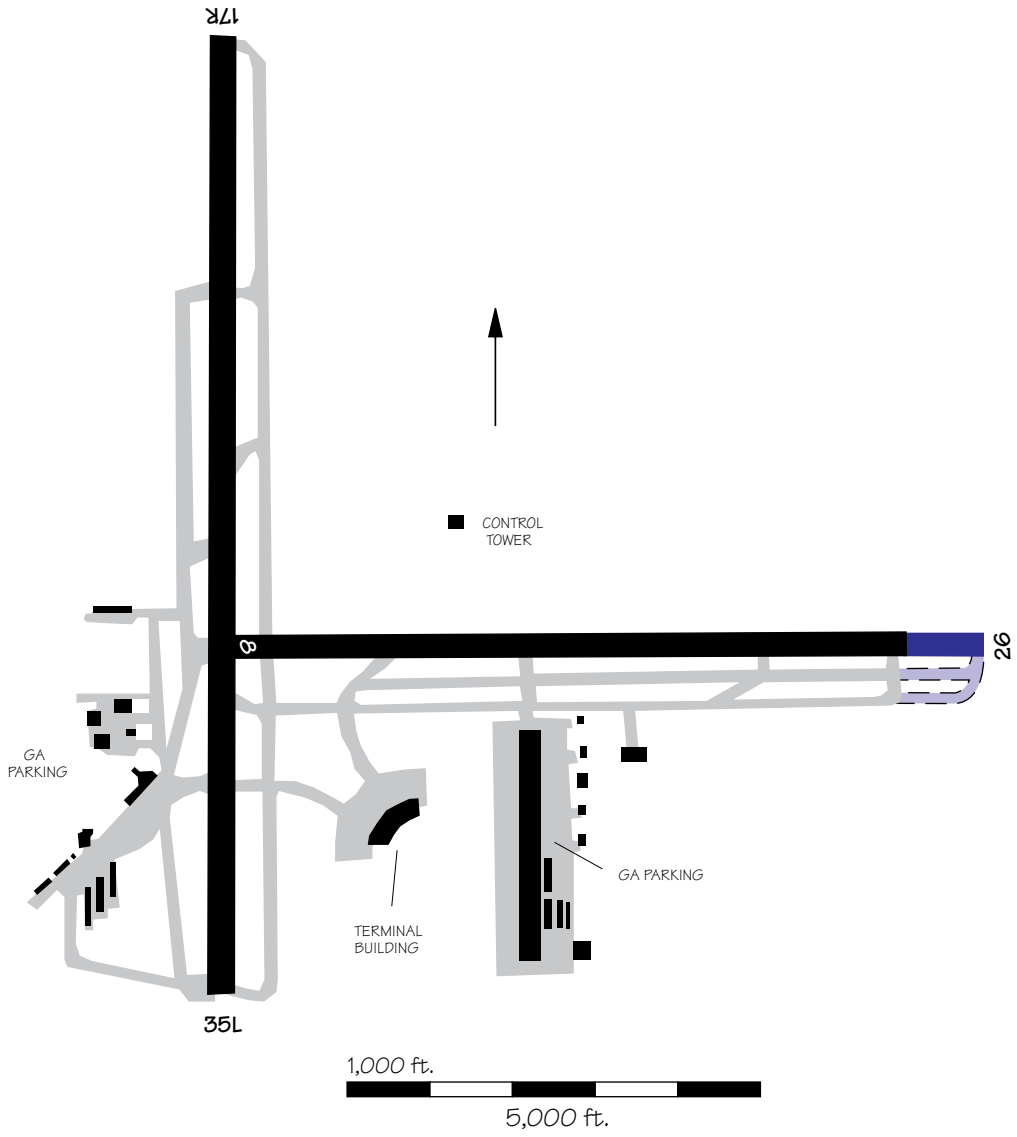
Louisville (SDF)

Plans have begun for two new parallel runways, 4,950 feet apart. They will be numbered Runways 17R/35L and 17L/35R, and will be 10,000 and 7,800 feet long, respectively. They will replace Runway 1/19 which will be closed. The estimated cost of construction is $350 million. Construction is scheduled to begin in 1991. The east runway is expected to be operational in 1995. The west runway is expected to be operational in 1997, permitting independent parallel IFR operations that would increase hourly IFR arrival capacity from 26 to 52.



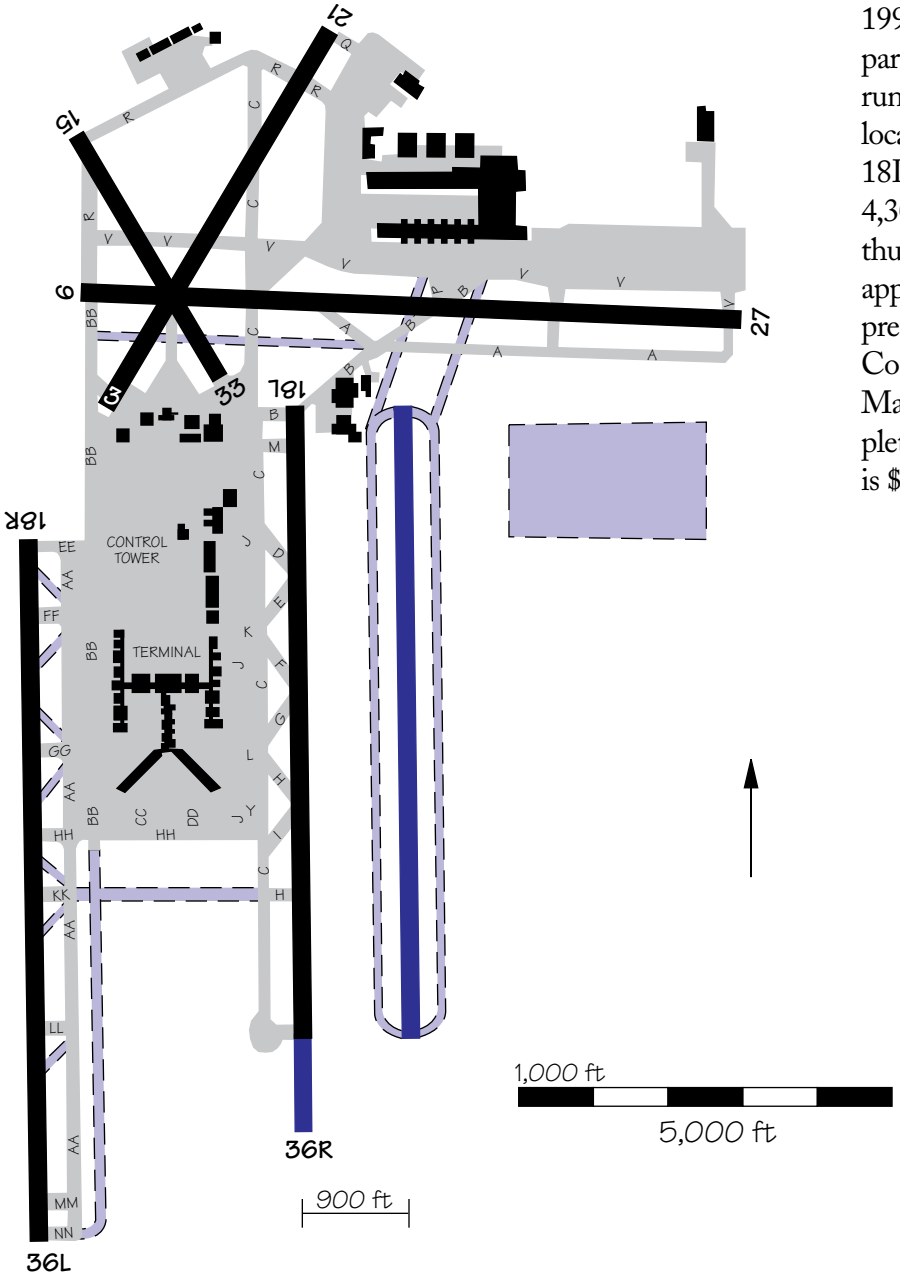
Lubbock (LBB)

An extension to Runway 8/26 is planned. The expected start of construction is 1994 at a cost of $6.2 million. It is anticipated that the extension will become operational in 1995.



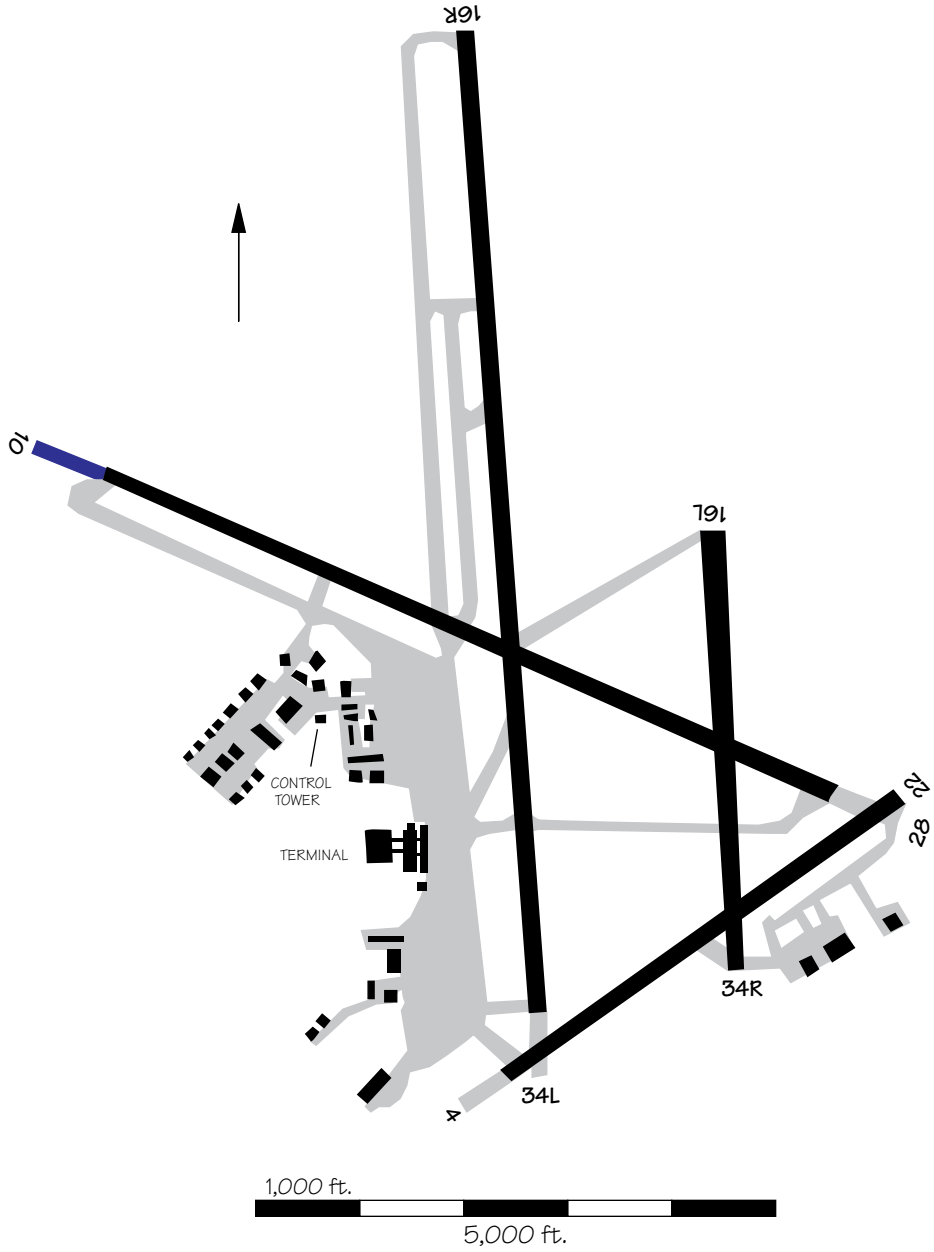
Memphis (MEM)

A new north-south runway, Runway 18L/36R, is planned, as noted in an ALP approved in June 1990. This new runway will be parallel to the existing pair of runways. It will tentatively be located 927 feet east of Runway 18L/36R; this puts the runway 4,300 feet from Runway 18R/36L, thus allowing independent parallel approaches. This would double present hourly IFR arrival capacity. Construction will be started in March 1992 and should be completed in 1994. The estimated cost is $105 million.



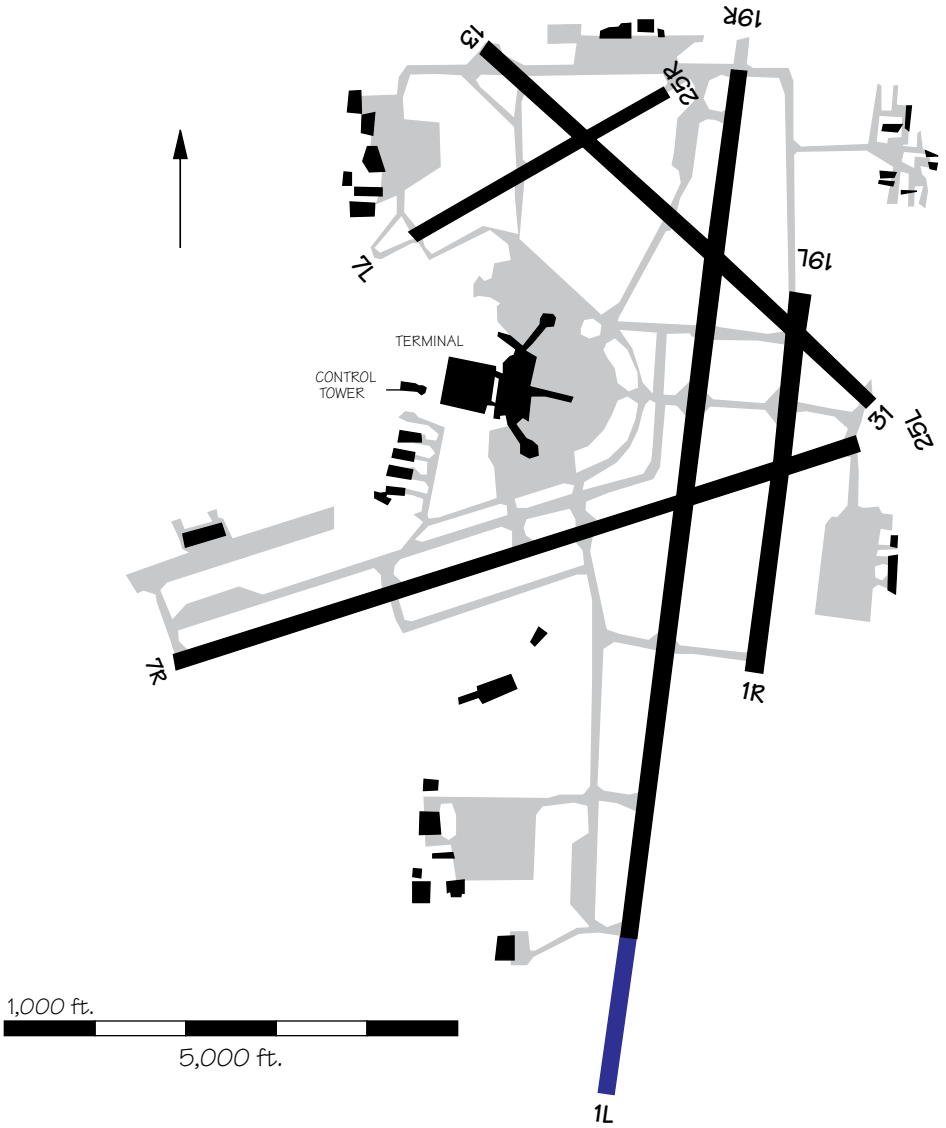
Midland (MAF)

An extension to Runway 10/28 is planned. Construction is planned to begin in 1991. The extension is estimated to be commissioned in March 1992. The estimated cost of construction is $6 million.



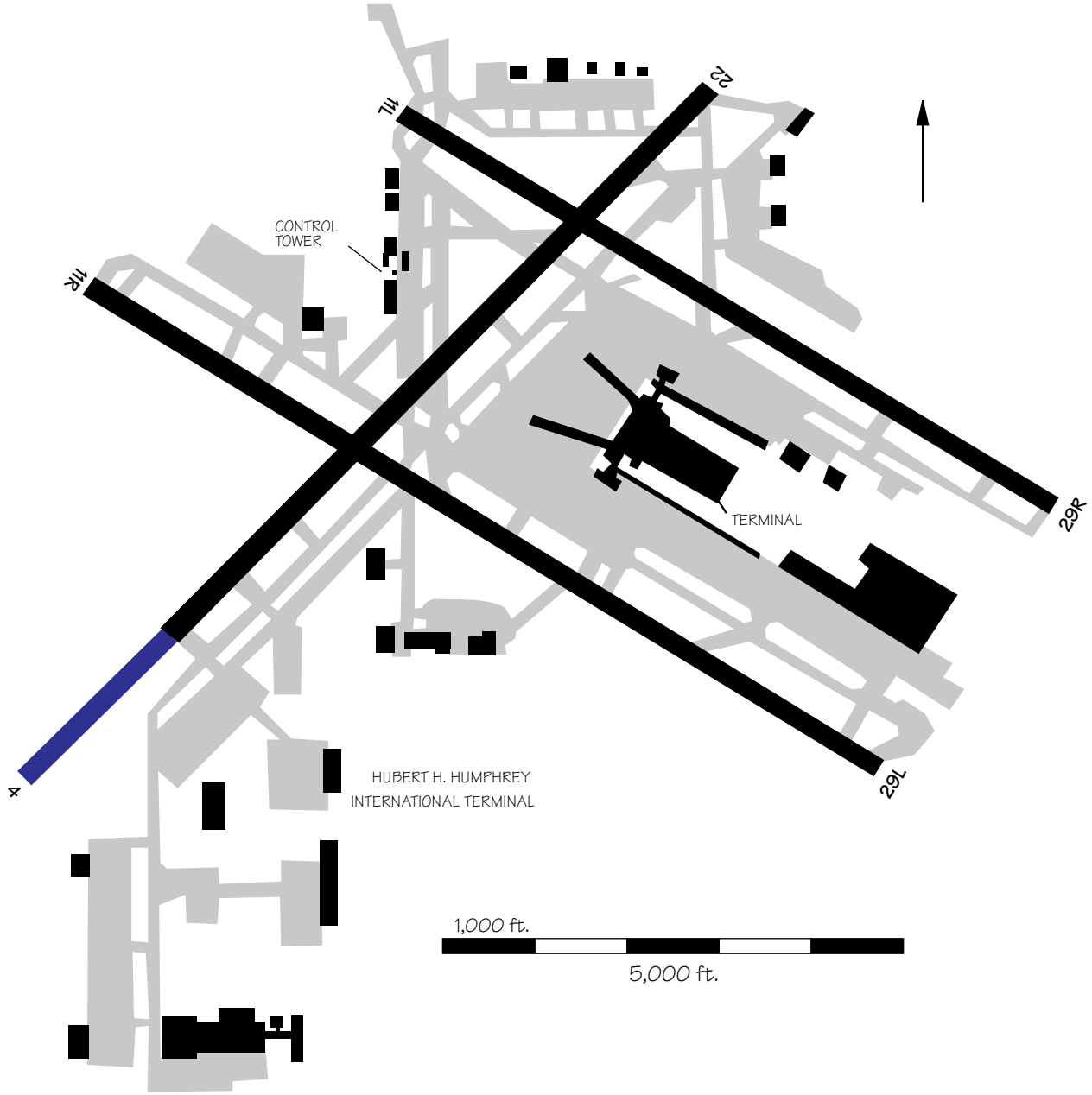
Milwaukee (MKE)

Runway 1L/19R is proposed to be extended 2,000 feet to the south for a total length of 11,600 feet. Construction is scheduled to begin in June 1992 and should be completed in August 1993 at a cost of $13 million. A new parallel Runway 7L/25R is planned in the future.



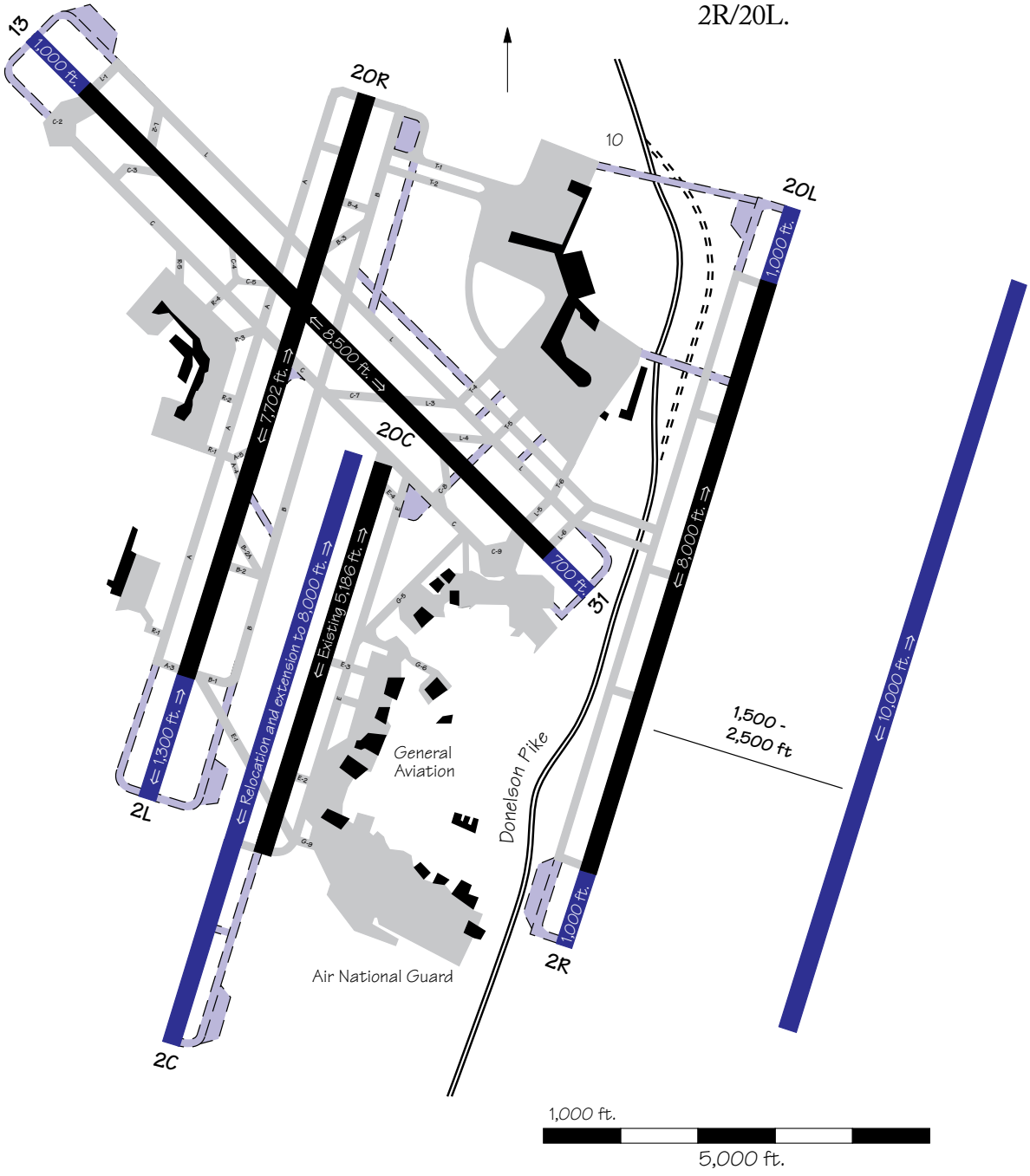
Minneapolis (MSP)

An extension of Runway 4/22 2,750 feet to the southwest is proposed. This will bring the runway length to 11,000 feet. Construction began in January 1991 and the extension should be operational in 1992. The estimated cost of construction is $11 million.



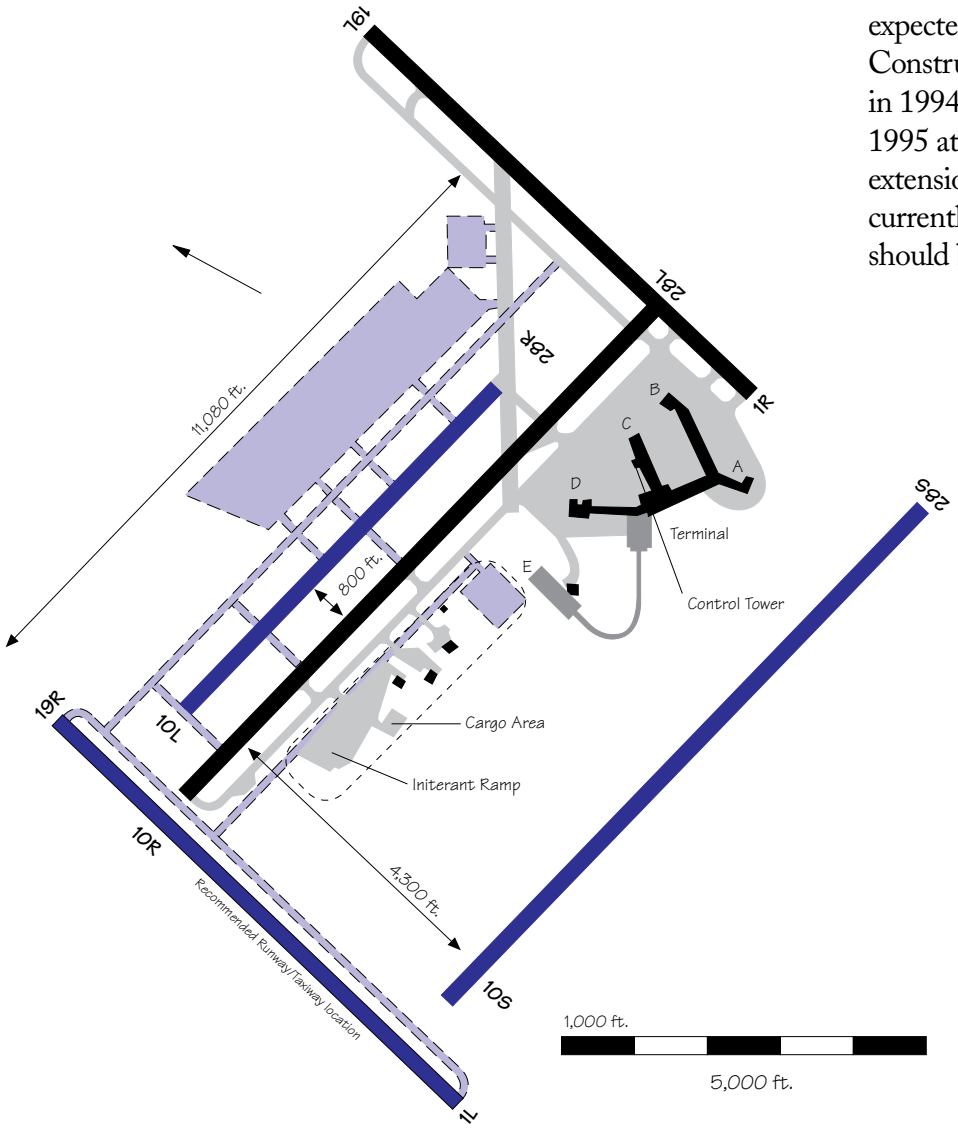
Nashville (BNA)

Plans exist to extend Runway 2L/20R and the Runway 2C/20C taxiway. Construction is expected to start in 1991 and the runway should be operational in the summer of 1995. The cost of the extension is estimated at $34 million. A new Runway 2E/20E is planned for the future between 1,500 and 3,000 feet from Runway 2R/20L.



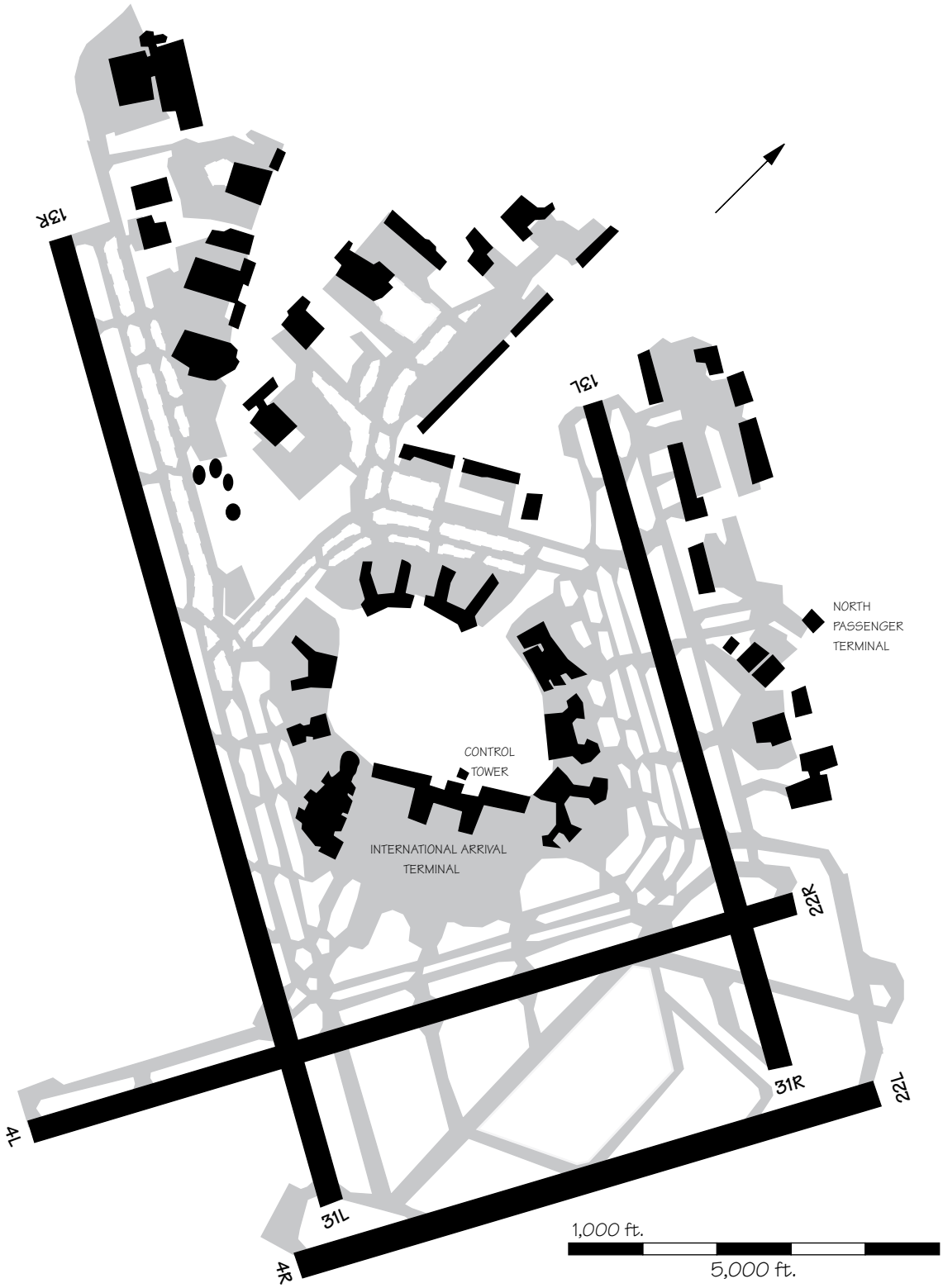
New Orleans (MSY)

A new north-south runway is planned. This new runway will be parallel to existing Runway 1/19 and will be located beyond the threshold of Runway 10, 8,000 feet away from Runway 1/19. This will allow independent parallel operations, doubling IFR hourly arrival capacity. Construction is planned to begin in January 1995 and be completed in 2000 at a cost of $180 million. The airport is also considering construction of a 6,000-foot runway approximately 10,000 feet north of and parallel to Runway 10/28. An environmental assessment is expected to be initiated in FY 1992. Construction is expected to begin in 1994 and should be completed in 1995 at a cost of $40 million. An extension of Runway 10/28 is currently being constructed and should be operational by late 1991.



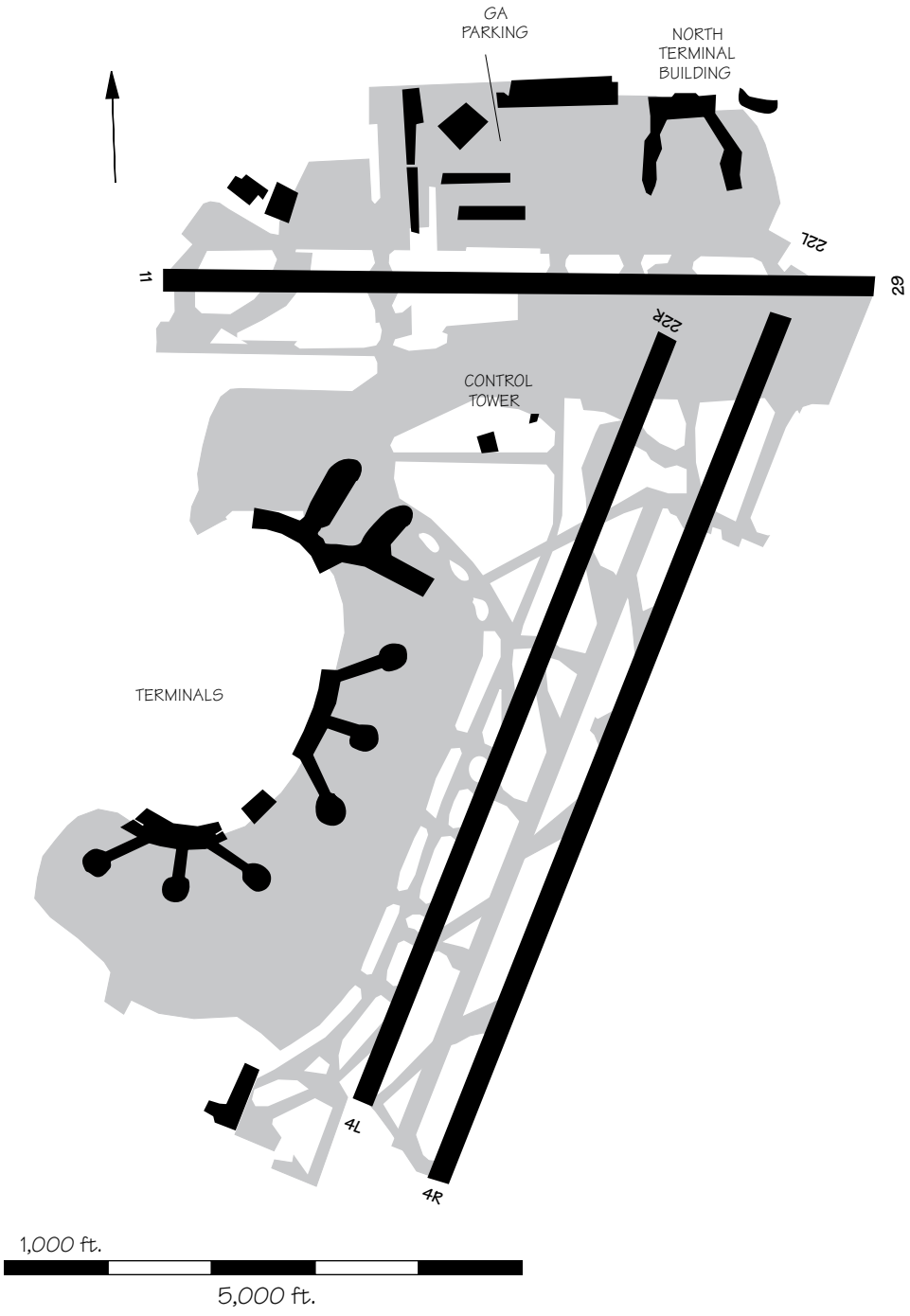
New York (JFK)

An extension of Runway 4L/22R is planned.



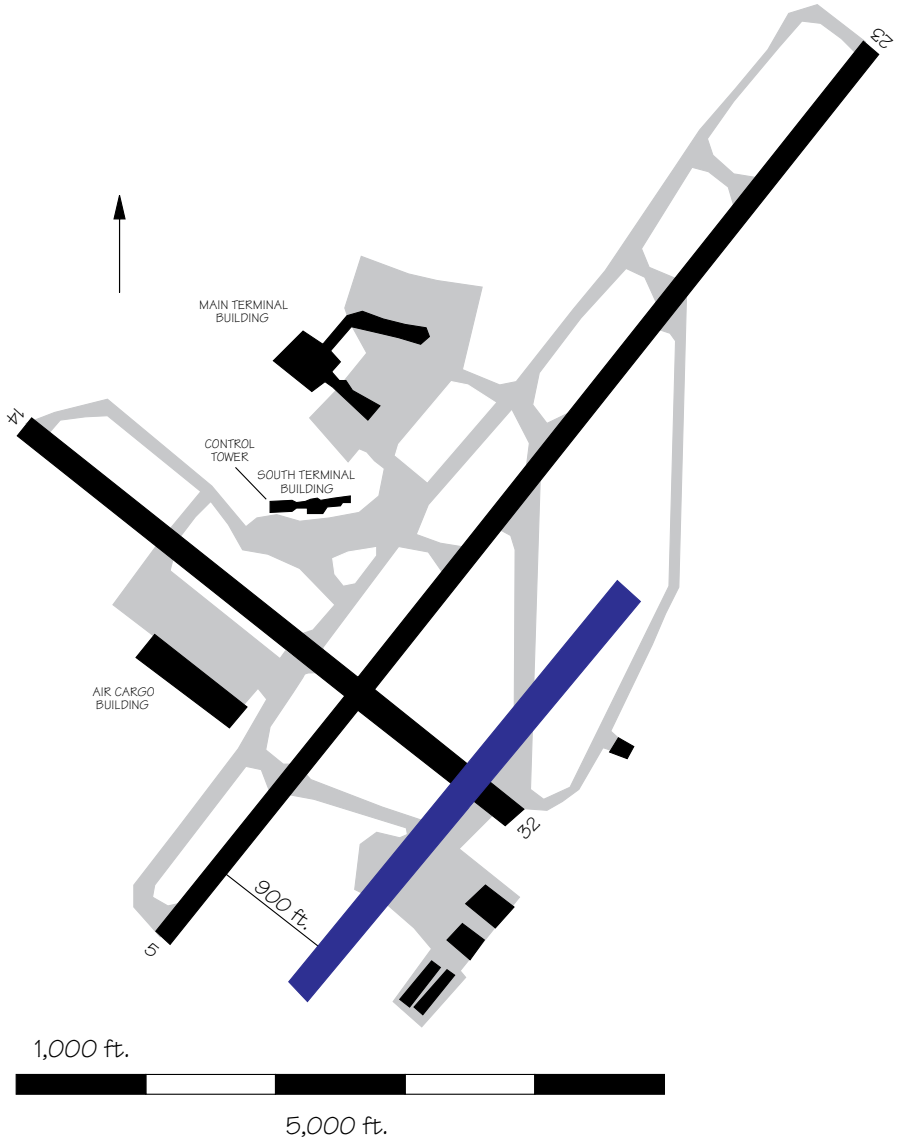
Newark (EWR)

A 500 foot extension to Runway 11/29 is planned.



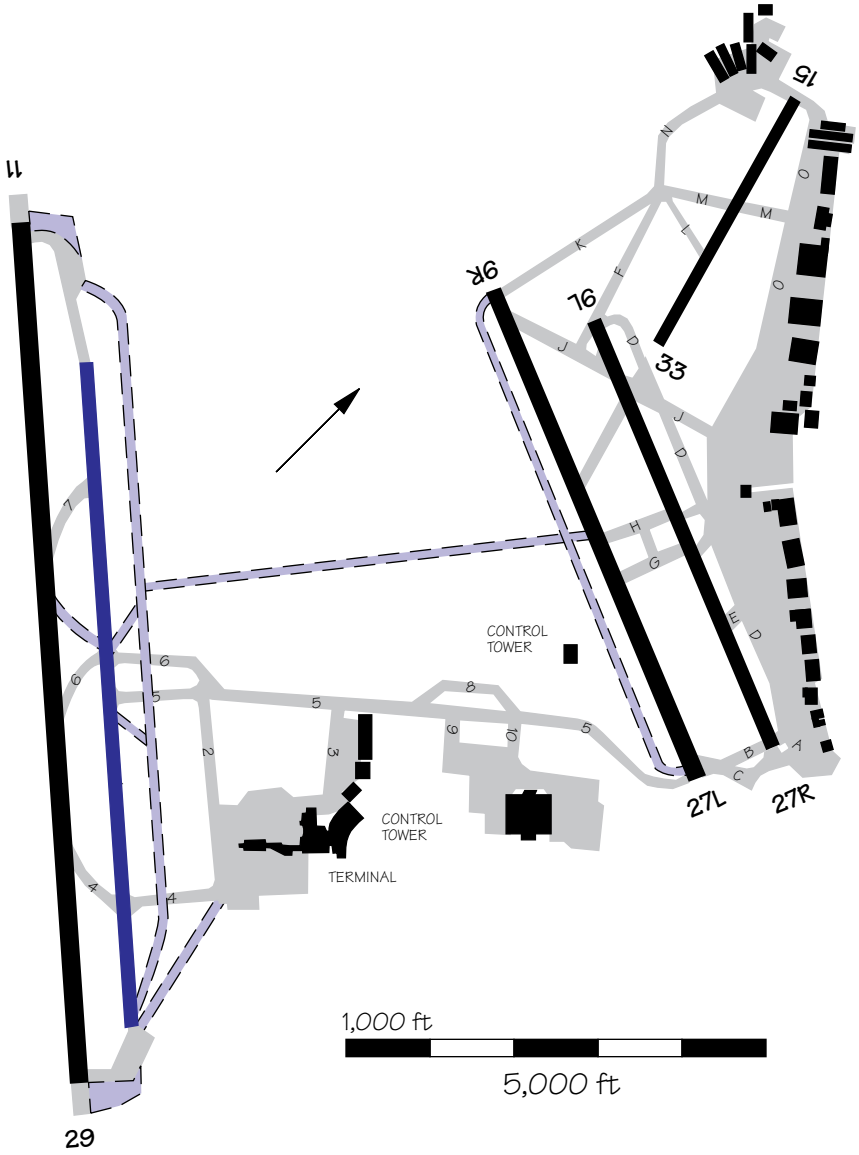
Norfolk (ORF)

Runway 5R/23L, parallel to and 900 feet southeast of the main Runway 5/23, is being planned. Completion of this new parallel would not increase hourly IFR arrival capacity, but would add additional departure capacity. It is estimated that the runway will be operational in 1994 at a cost of $13 million with construction starting in July 1992. An extension to Runway 14/32 is also planned. The estimated cost is $2 million and the runway is expected to be operational in October 1996.

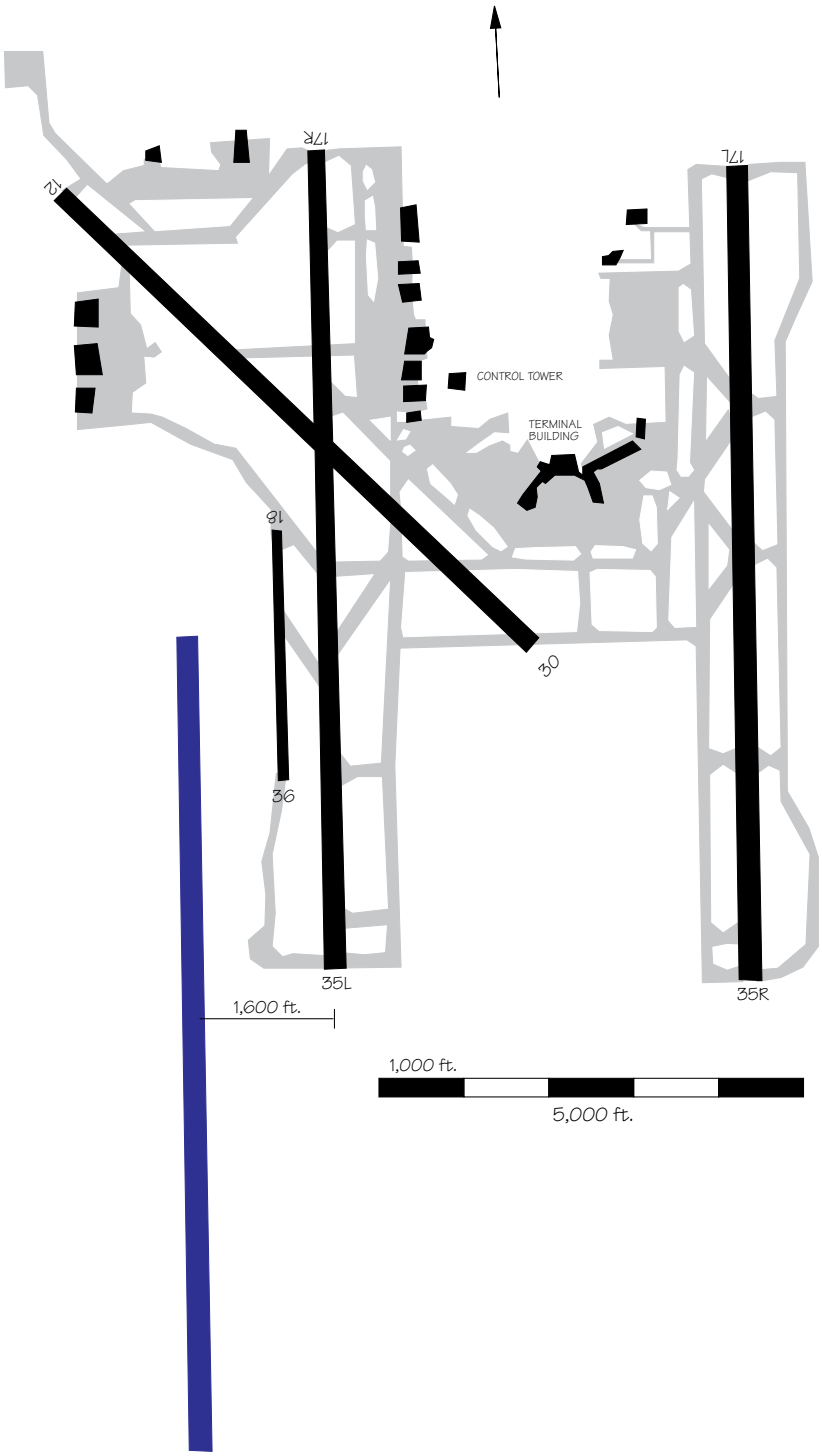


Oakland (OAK)

A new Master Plan is underway considering construction of a new air carrier runway, Runway 11R/29L. The estimated cost of construction is $143 million.



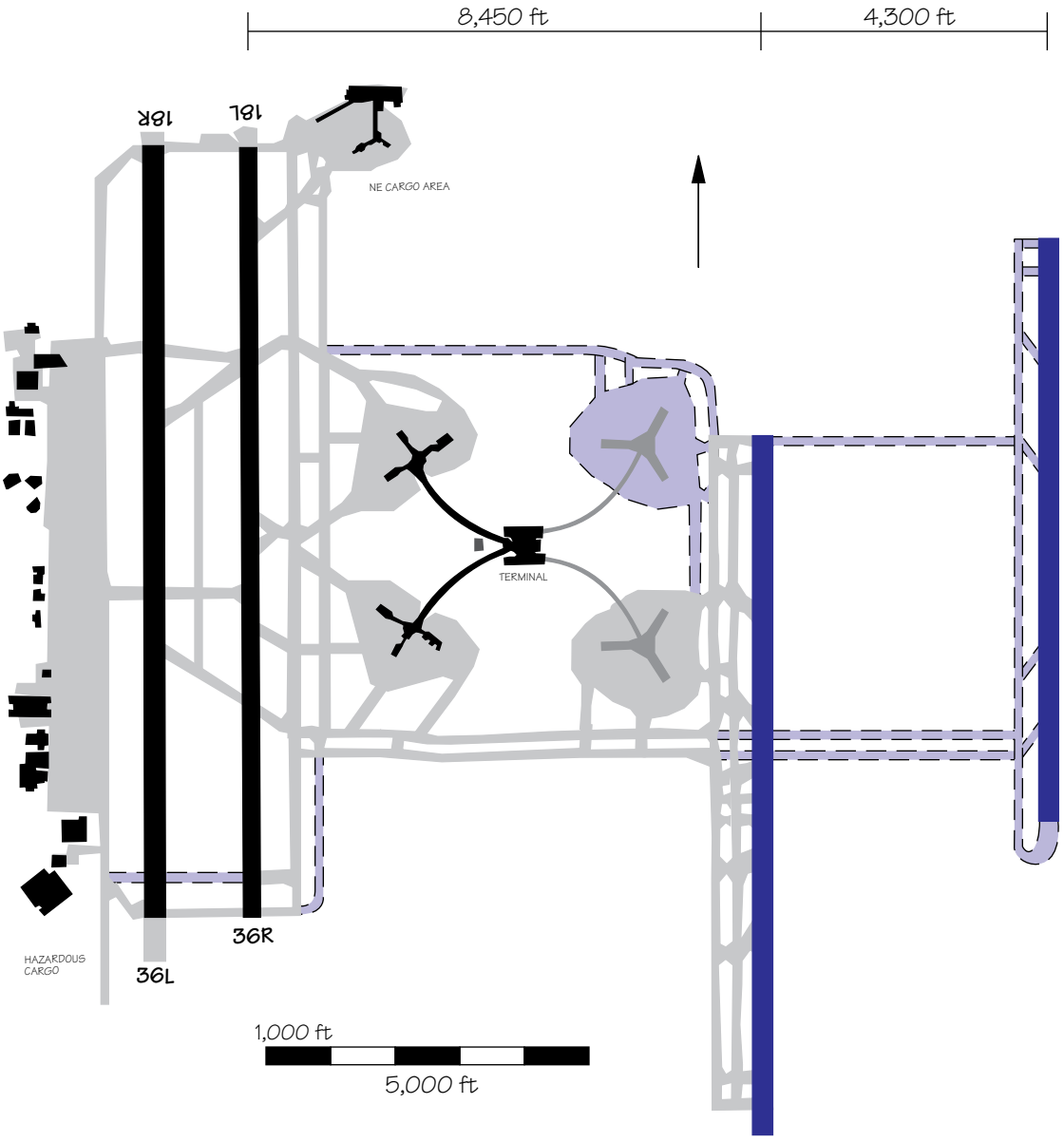
Oklahoma City (OKC)



Extensions to both north-south runways to 12,500 feet are planned. It is anticipated that the extensions will be operational in 2001. The estimated cost of extending Runway 17R/35L is $20 million; the estimated cost of extending Runway 17L/35R is $24 million. Plans also exist for a 10,000 foot long parallel runway 1,600 feet west of Runway 17R/35L. The estimated cost of construction is $55 million and the estimated operational date is October 2001.

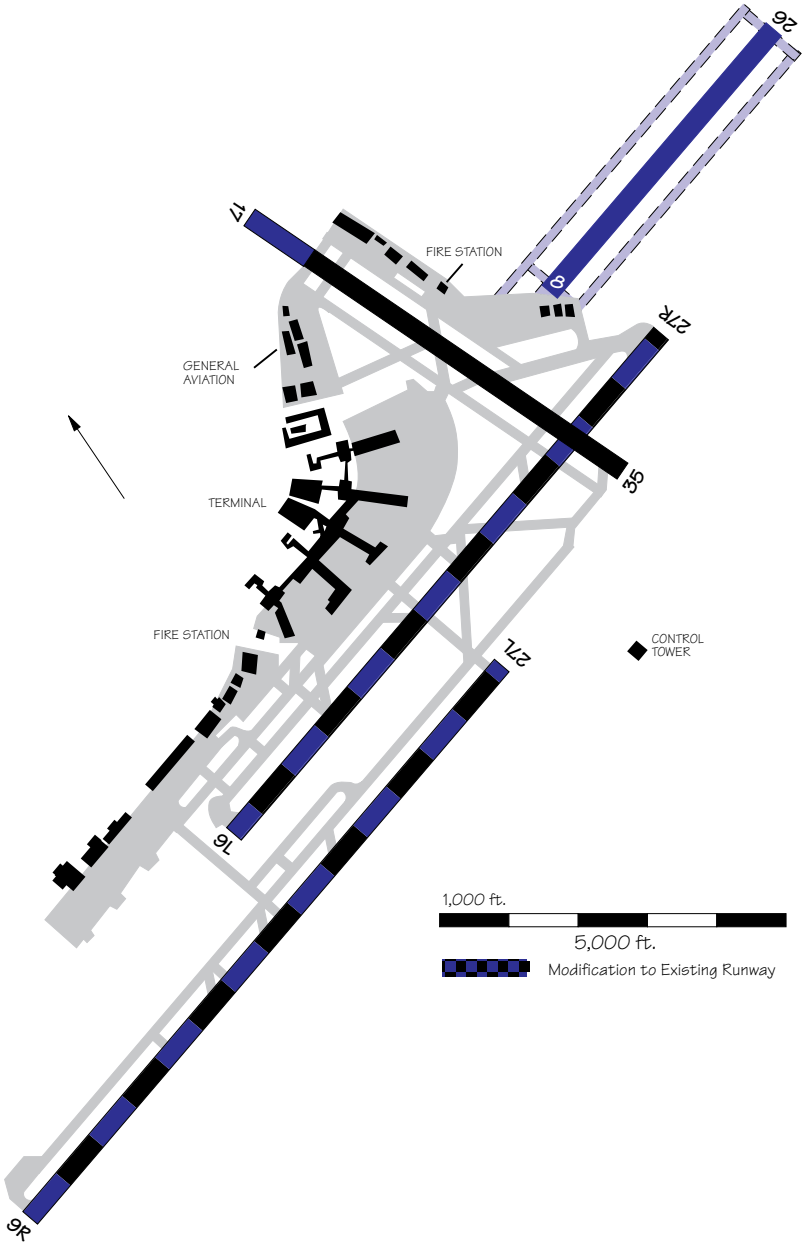
Orlando (MCO)

A fourth north-south runway, Runway 17L/35R, is expected to be operational in 1993. It will be located 4,300 feet east of the third runway, Runway 17R/35L. This may permit triple independent IFR operations. The estimated cost of construction of this runway is $80 million. A fifth runway, Runway 17C/35C, has been proposed but does not appear in the Master Plan.



Philadelphia (PHL)

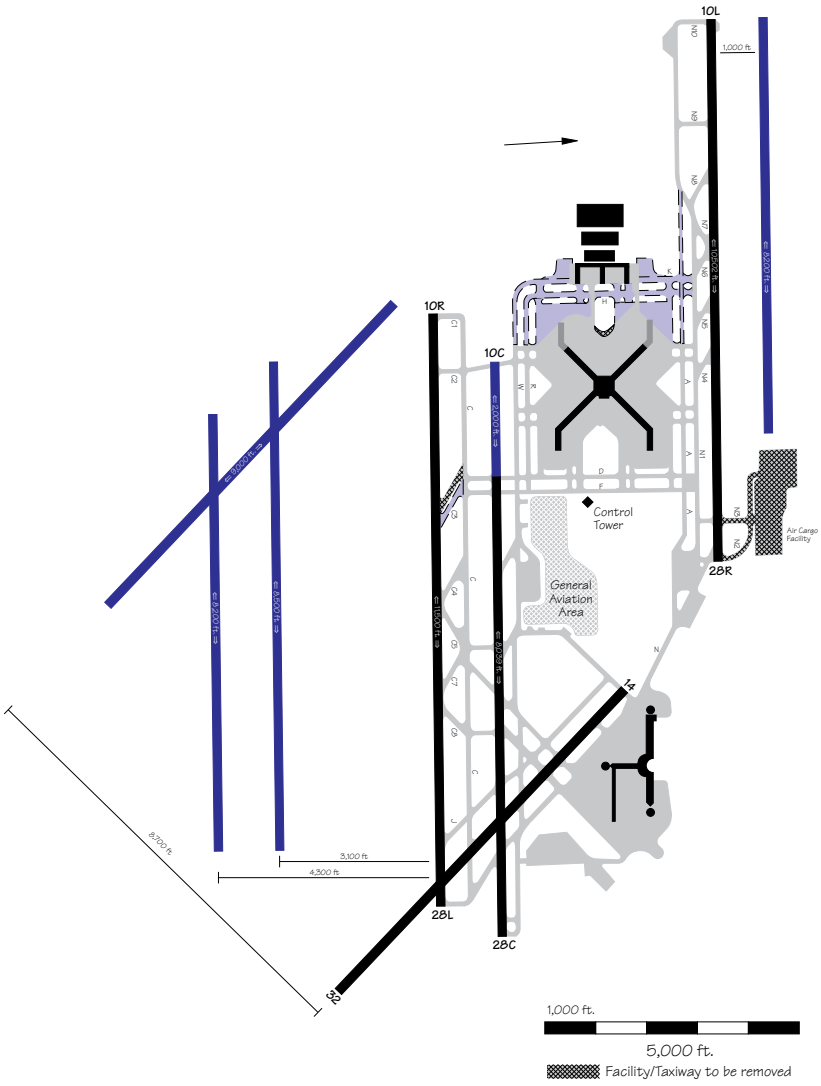
The inner parallel, Runway 9L/27R, will shift 600 feet south closer to Runway 9R/27L. The relocated Runway 9L/27R is expected to be operational in January 1997 at an estimated cost of $55 million. A new 5,000 foot parallel commuter runway, Runway 8/26, has been proposed to be located in the northeast quadrant. It could be spaced as wide as 4,300 feet from the relocated inner parallel. The location has not been established yet. This could potentially provide independent parallel IFR operations. The estimated cost of commuter Runway 8/26 is $169 million.



Phoenix (PHX)

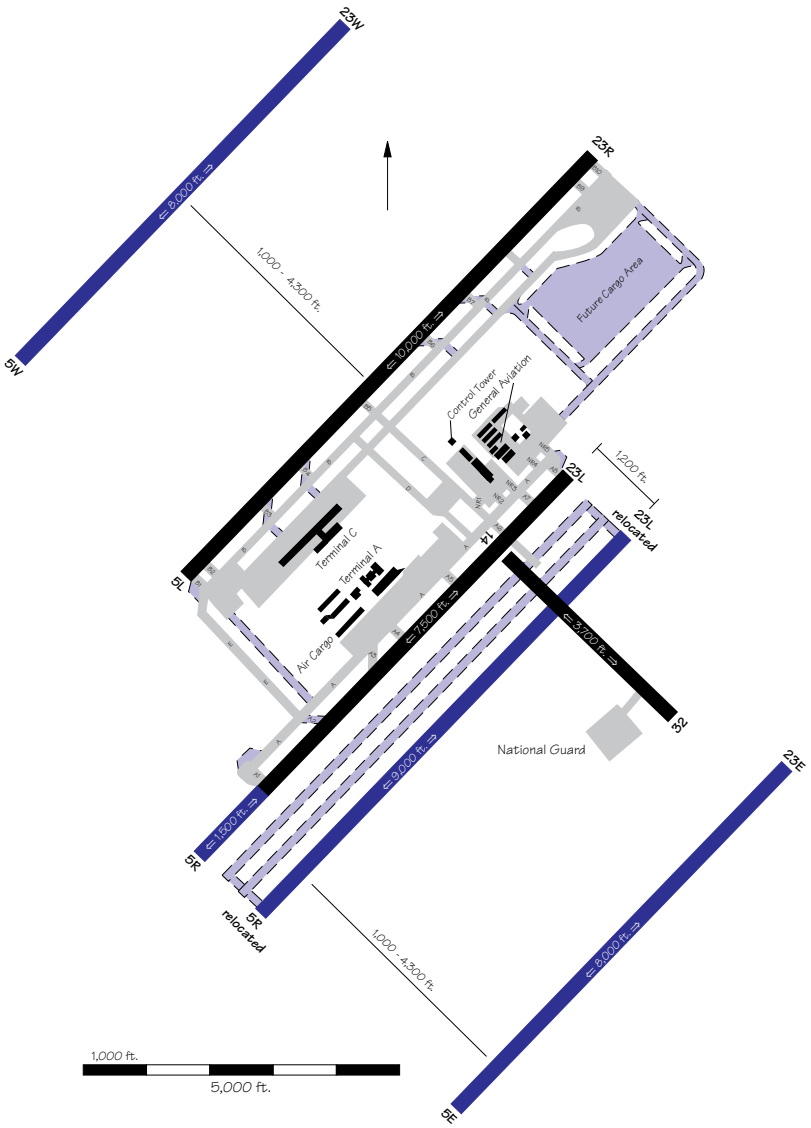
A 9,500-foot third parallel runway, Runway 8S/26S, is proposed 800 feet south of Runway 8R/26L. The cost of construction is estimated to be $88 million. An environmental assessment of this third runway is underway and was submitted during the second quarter of FY91. The estimated operational date is 1994.

Pittsburgh (PIT)



A new Master Plan was started in 1990. It recommended a choice between a new parallel crosswind runway and a fourth Runway 10/28 parallel. Construction of Runway 14R/32L, parallel to existing crosswind Runway 14/32, is tentatively scheduled to begin in June 1993 and be completed in 1995. It will be located more than 11,650 feet from the existing crosswind runway. Estimated cost is $100 million. The fourth Runway 10/28 parallel may take higher priority. It is also currently scheduled to begin in 1993, and be completed in 1995, also at an estimated cost of $100 million. Completion of the fourth parallel may permit triple independent IFR approaches.

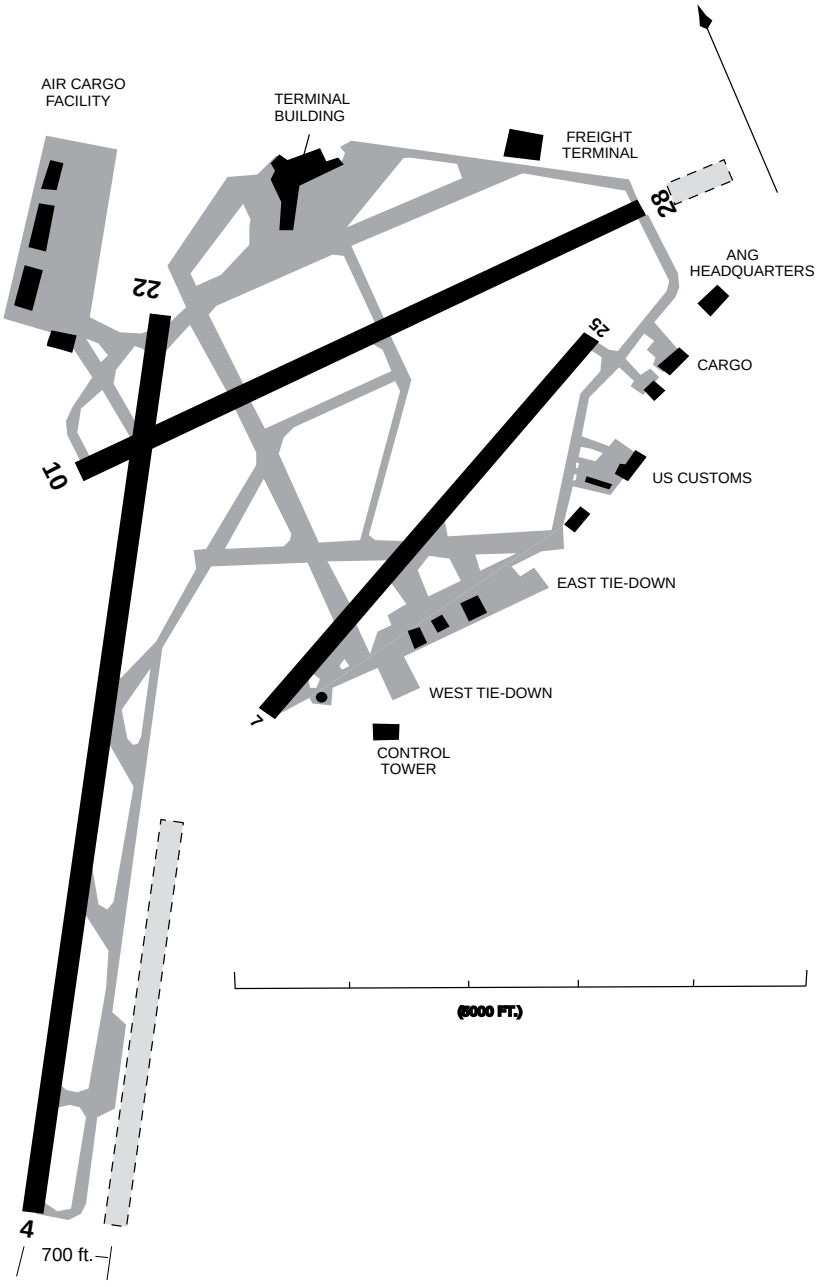
Raleigh-Durham (RDU)



The relocation of Runway 5R/23L and associated taxiways is expected to begin in 1993. The new runway will be parallel to and approximately 1,200 feet southeast of existing Runway 5R/23L. It will be a 9,000-foot long air carrier runway and could permit independent IFR approaches. The estimated operational date is 1996 and the estimated cost is $45 million. Two other runways are proposed for eventual construction. One is a parallel commuter runway, southeast of the existing Runway 5R/23L. The other would be a parallel runway approximately 1,200 feet southwest of Runway 5L/23R.

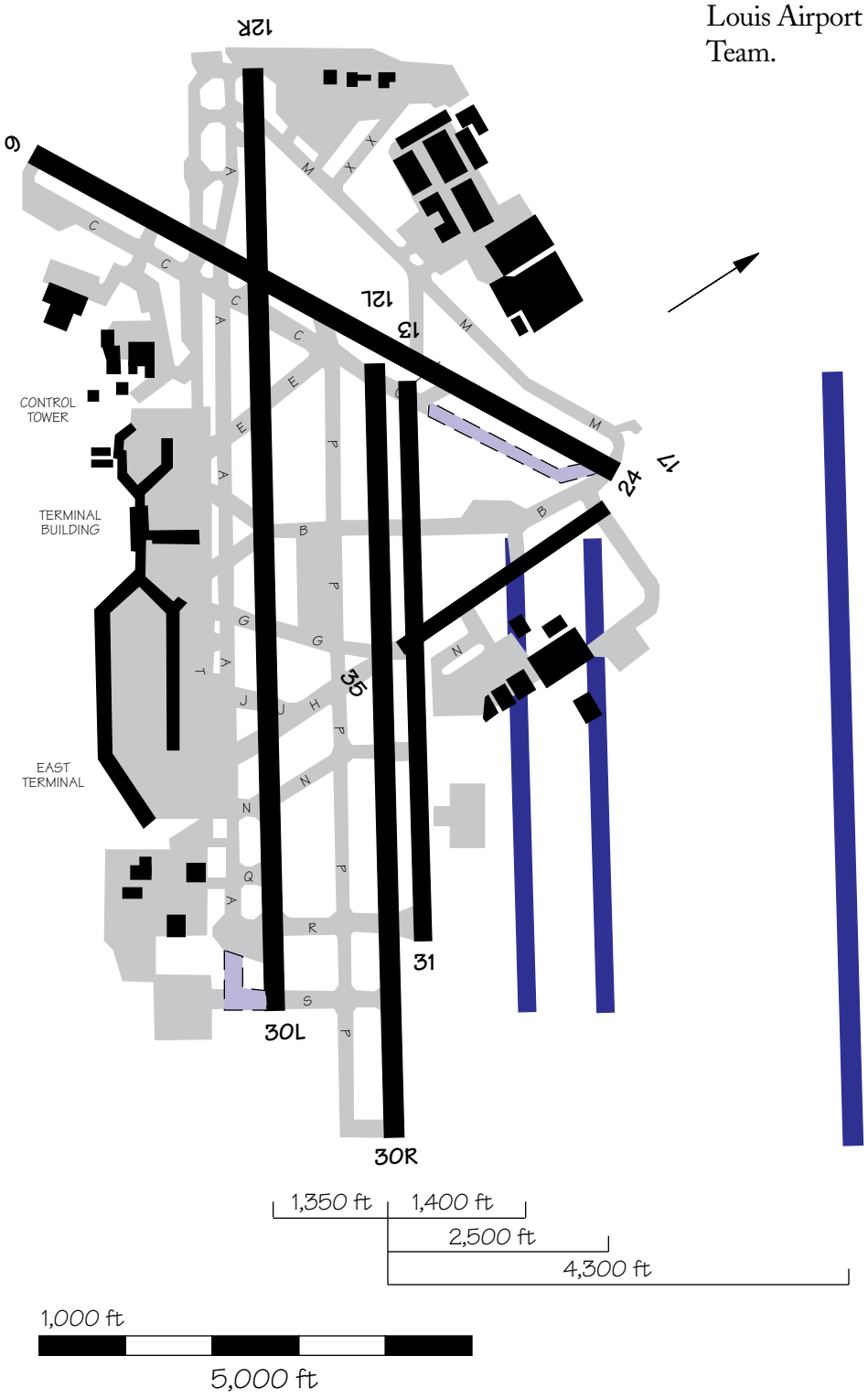
Rochester (ROC)

Construction is expected to begin in 1993 on an extension to Runway 10/28 to be completed in 1994. The estimated cost of construction is $2.3 million. An extension to Runway 4/22 is expected to cost $0.5 million. Construction will begin in 1995 and the extension should be operational in 1996. Parallel Runway 4R/22L is estimated to cost $4.7 million and should be operational in 2000. Environmental assessments have not yet been started for these projects.



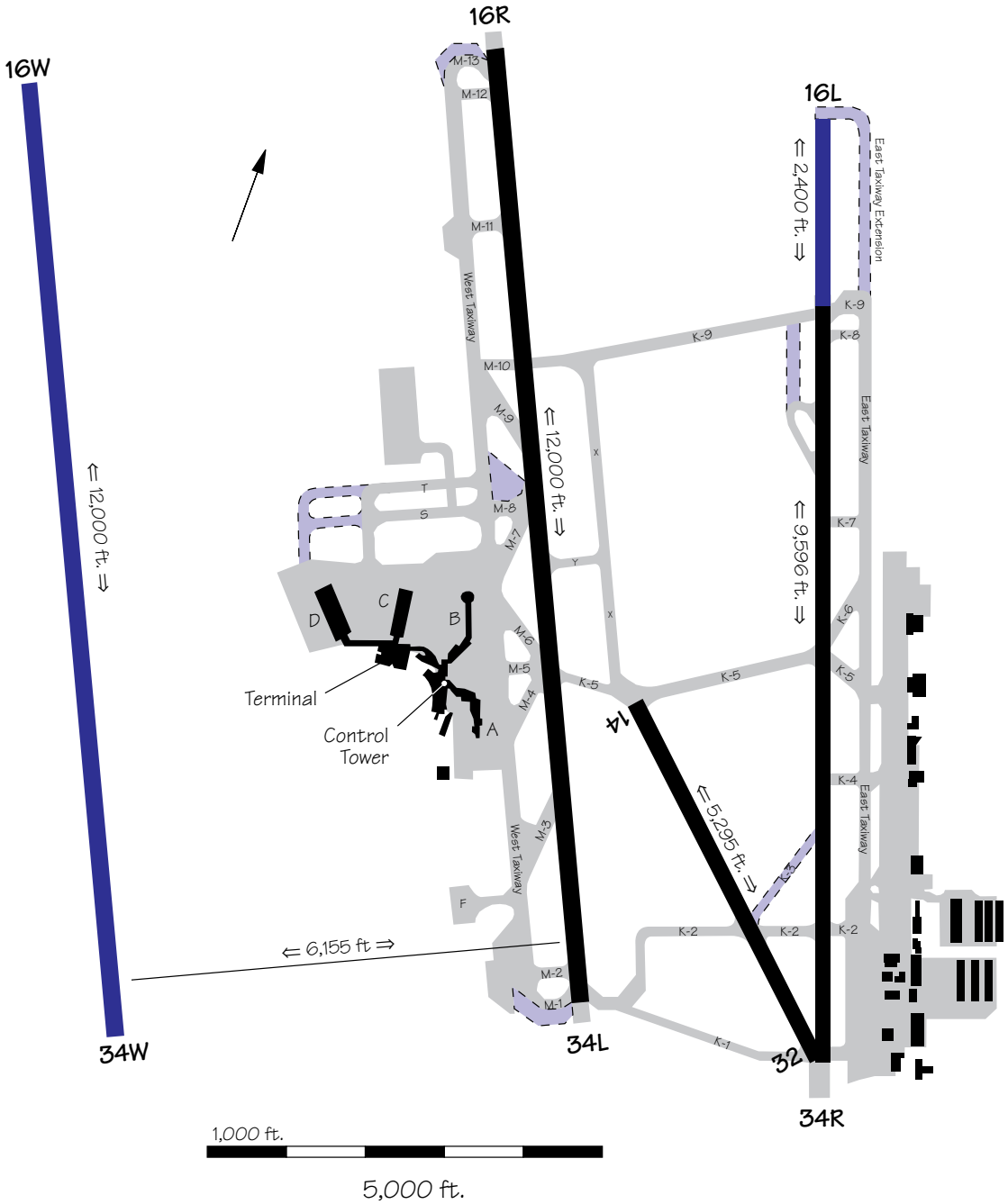
St. Louis (STL)

A new parallel Runway 12L/30R in several configurations has been recommended by the St. Louis Airport Capacity Design Team.



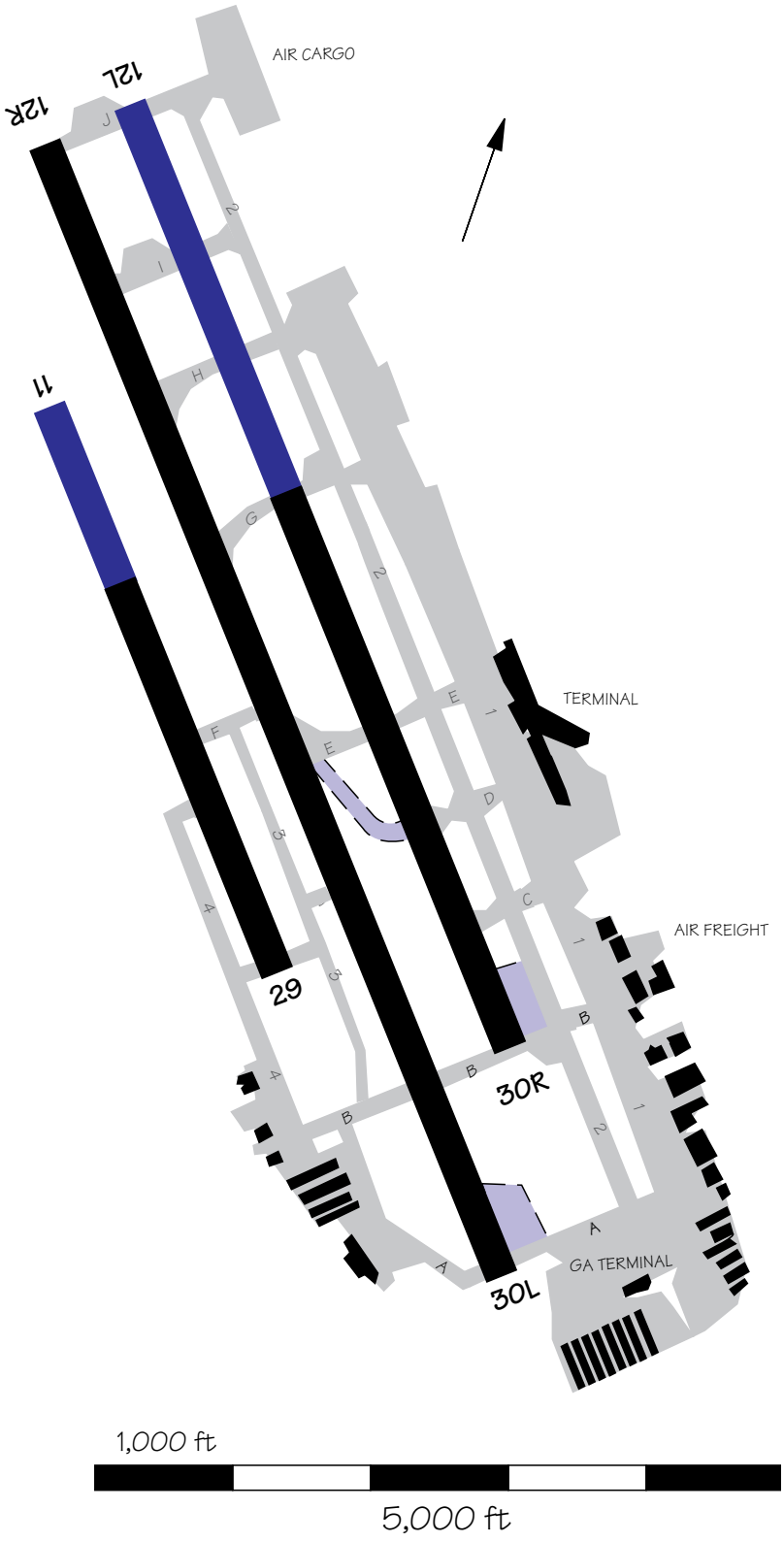
Salt Lake City (SLC)

A new 12,000 foot runway parallel to and 6,300 feet west of existing Runway 16R/34L is planned. Construction is scheduled to begin in September 1992 and should be completed in 1994. The estimated cost of construction is $95 million. This may permit triple IFR approach operations, if approved.



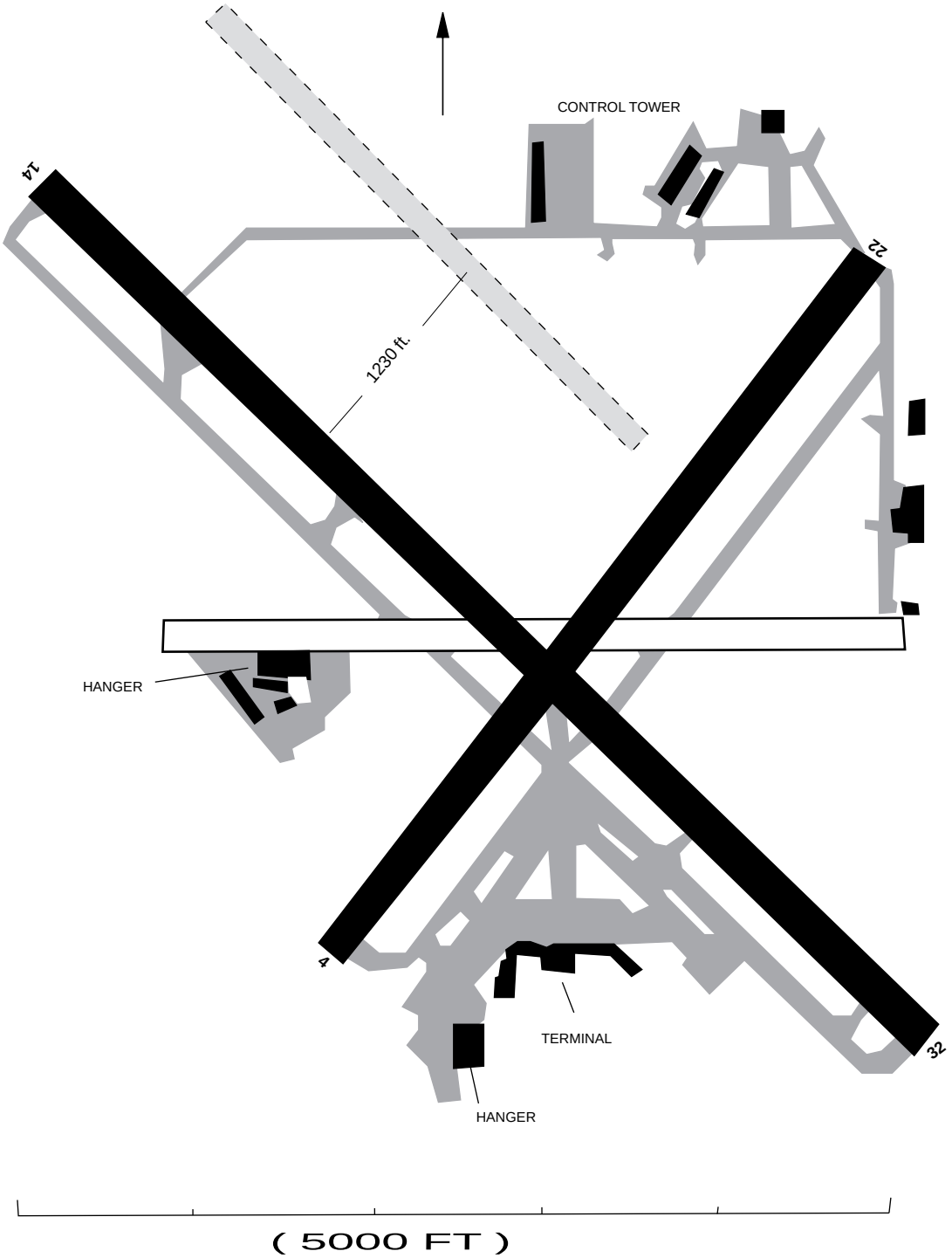
San Jose (SJC)

Consideration is being given to extend Runway 30R/12L for air carrier capability. The estimated cost of construction of the extension is $10 million.



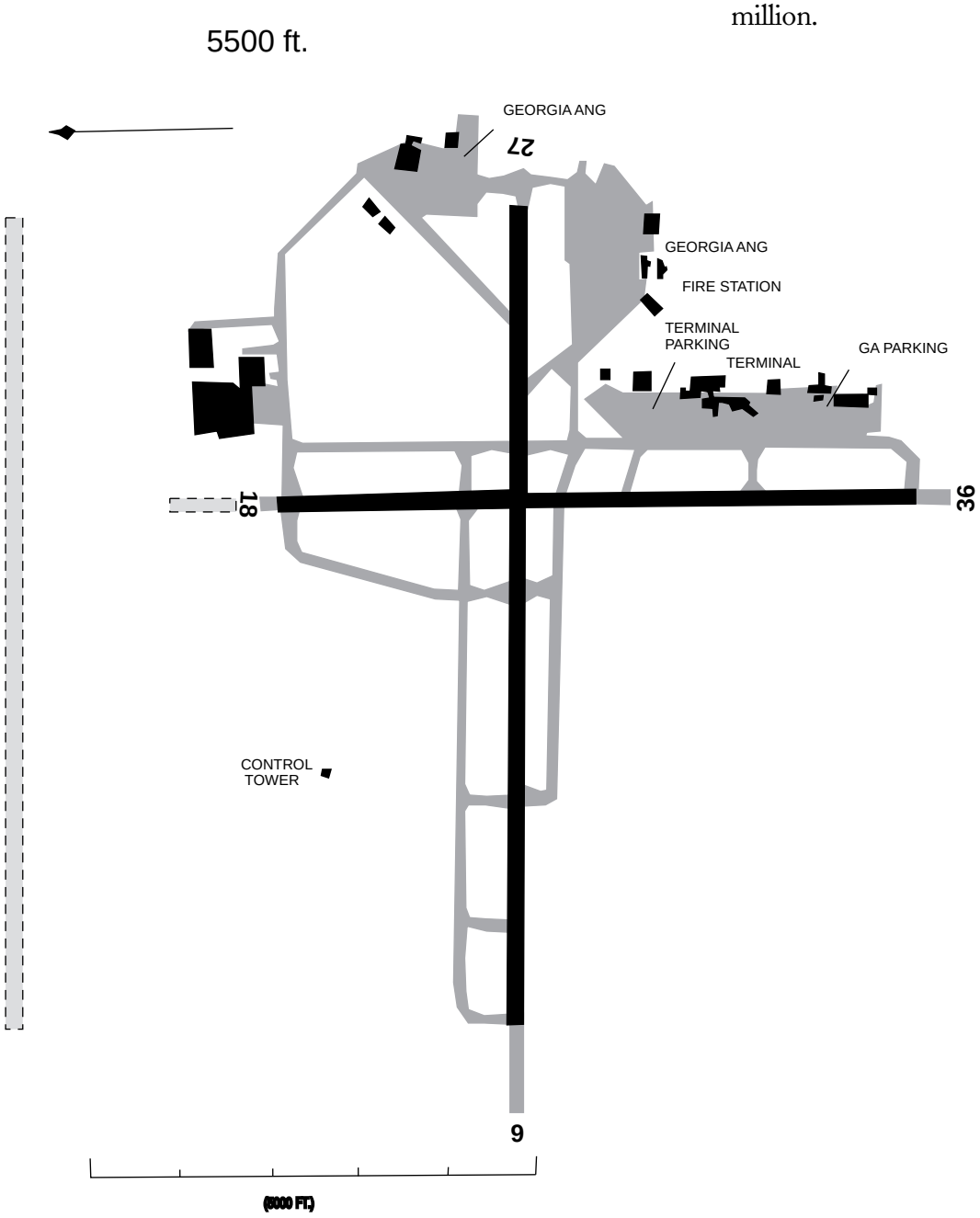
Sarasota (SRQ)

A new parallel Runway 14R/32L is being considered.



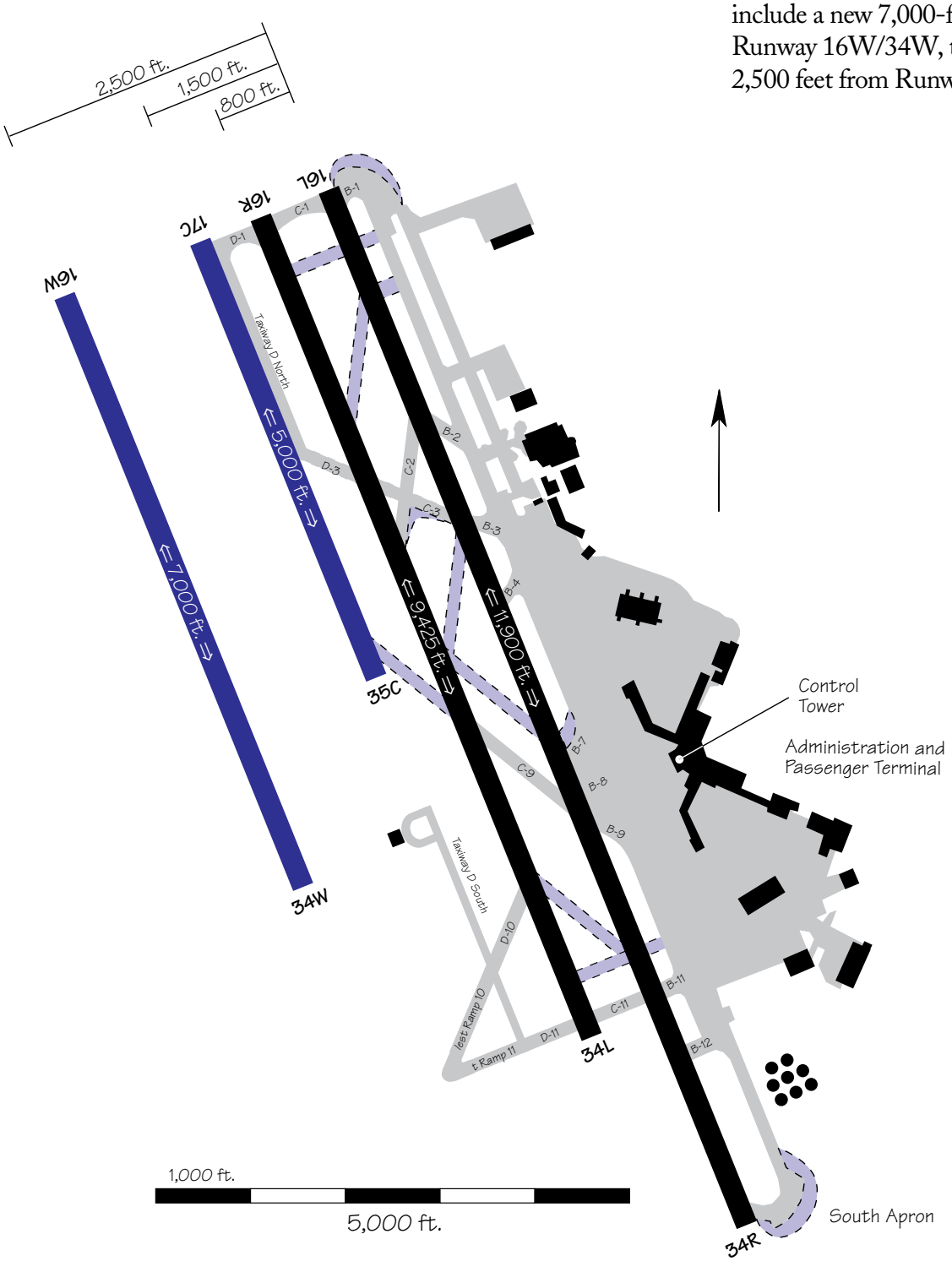
Savannah (SAV)

Two runway construction projects are being planned. A 1,000 foot extension to Runway 18/36 is expected to begin in 1994 and should be completed in 1995 at a cost of $3.9 million. A new 9,000 foot long parallel runway, Runway 9L/27R, is shown on an airport layout. Construction is expected to begin in 2009 and should be completed in 2010 at a cost of $20 million.



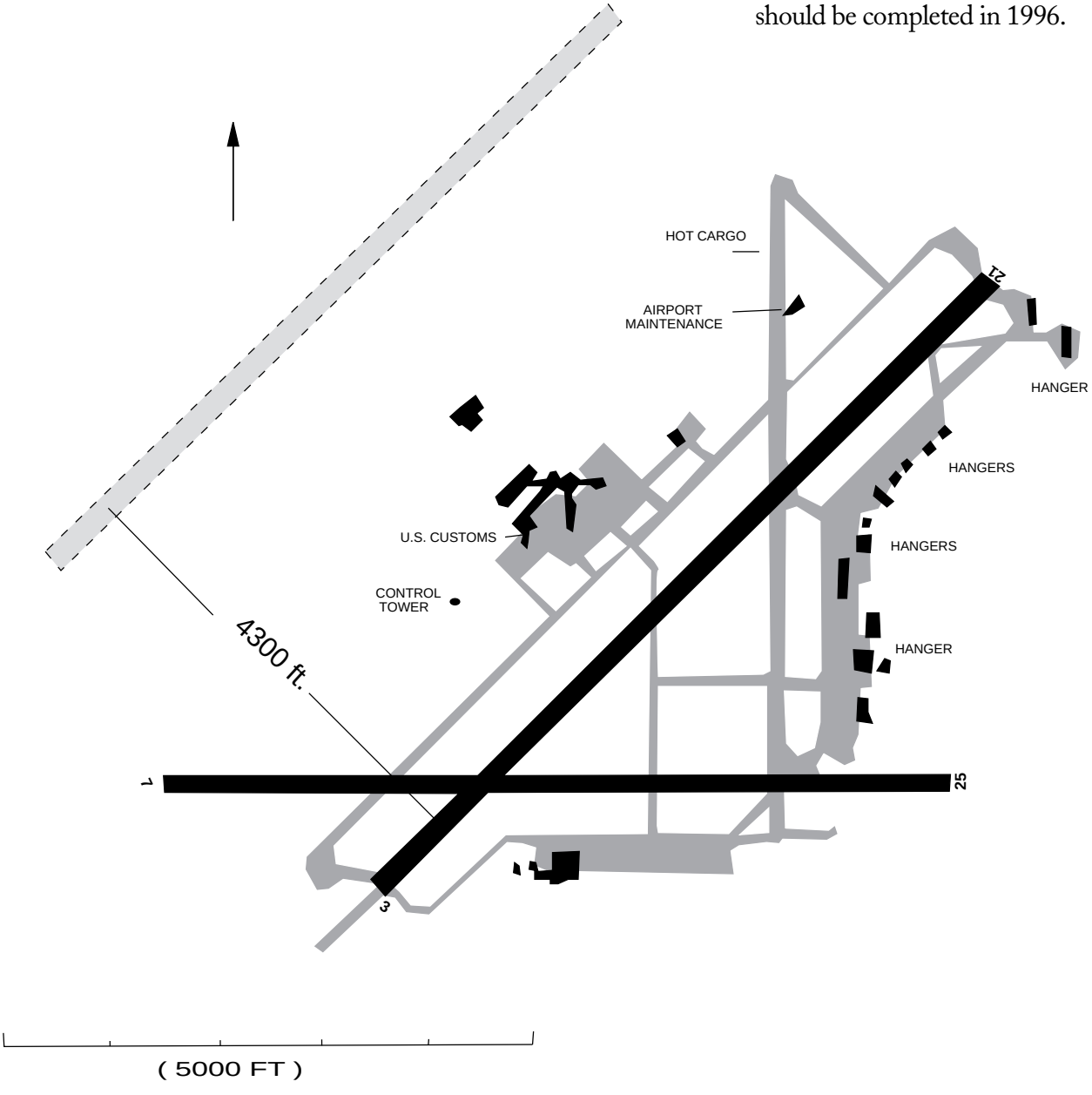
Seattle-Tacoma (SEA)

Potential airport improvements include a new 7,000-foot runway, Runway 16W/34W, to be located 2,500 feet from Runway 16L/34R.



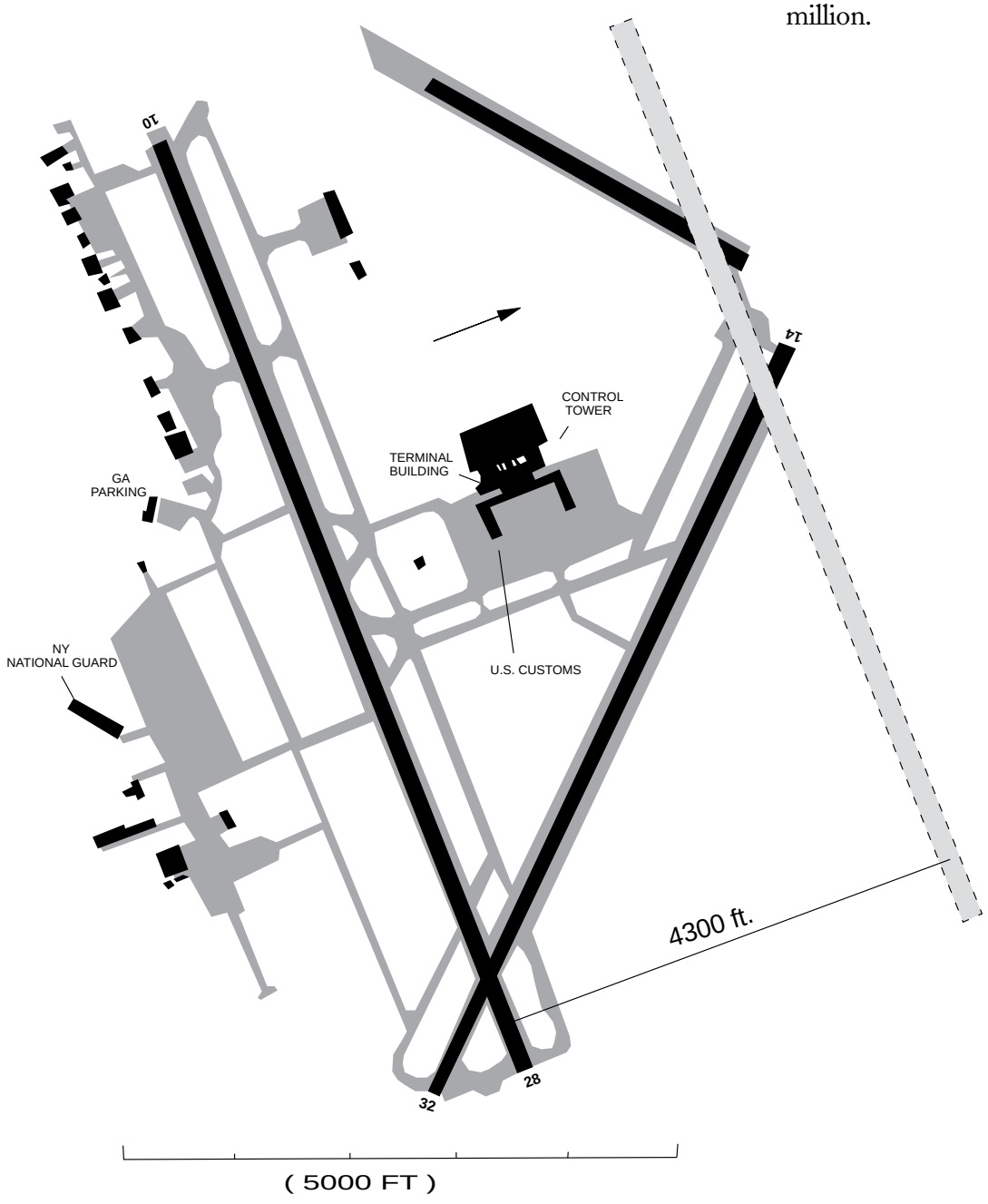
Spokane (GEG)

Future projects for capacity enhancement include the construction of a parallel runway, Runway 3L/21R. The new runway will be 8,800 feet by 150 feet, and will be separated from Runway 3R/21L by 4,300 feet. This would enable independent parallel operations, doubling hourly IFR arrival capacity. The estimated cost of construction of the new runway is approximately $11 million. Construction is expected to start in 1995 and should be completed in 1996.



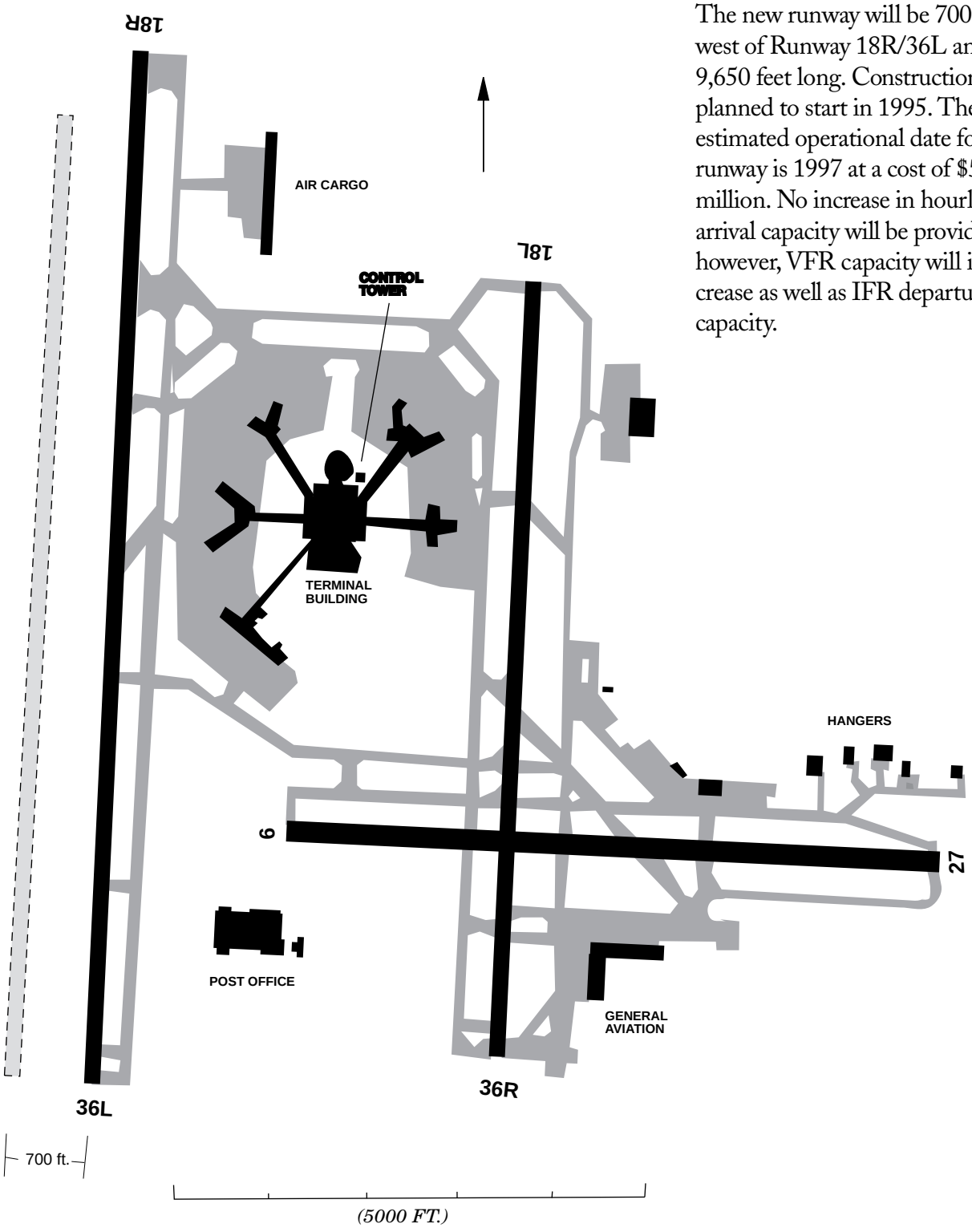
Syracuse (SYR)

There is potential for a parallel Runway 10L/28R, 9,000 feet long, and separated from the existing Runway 10/28 by 4,300 feet. This would provide independent parallel IFR operations, doubling hourly IFR arrival capacity. The expected operational date is sometime in 1997 if construction starts in 1996 as anticipated. The cost of construction is estimated to be $5 million.



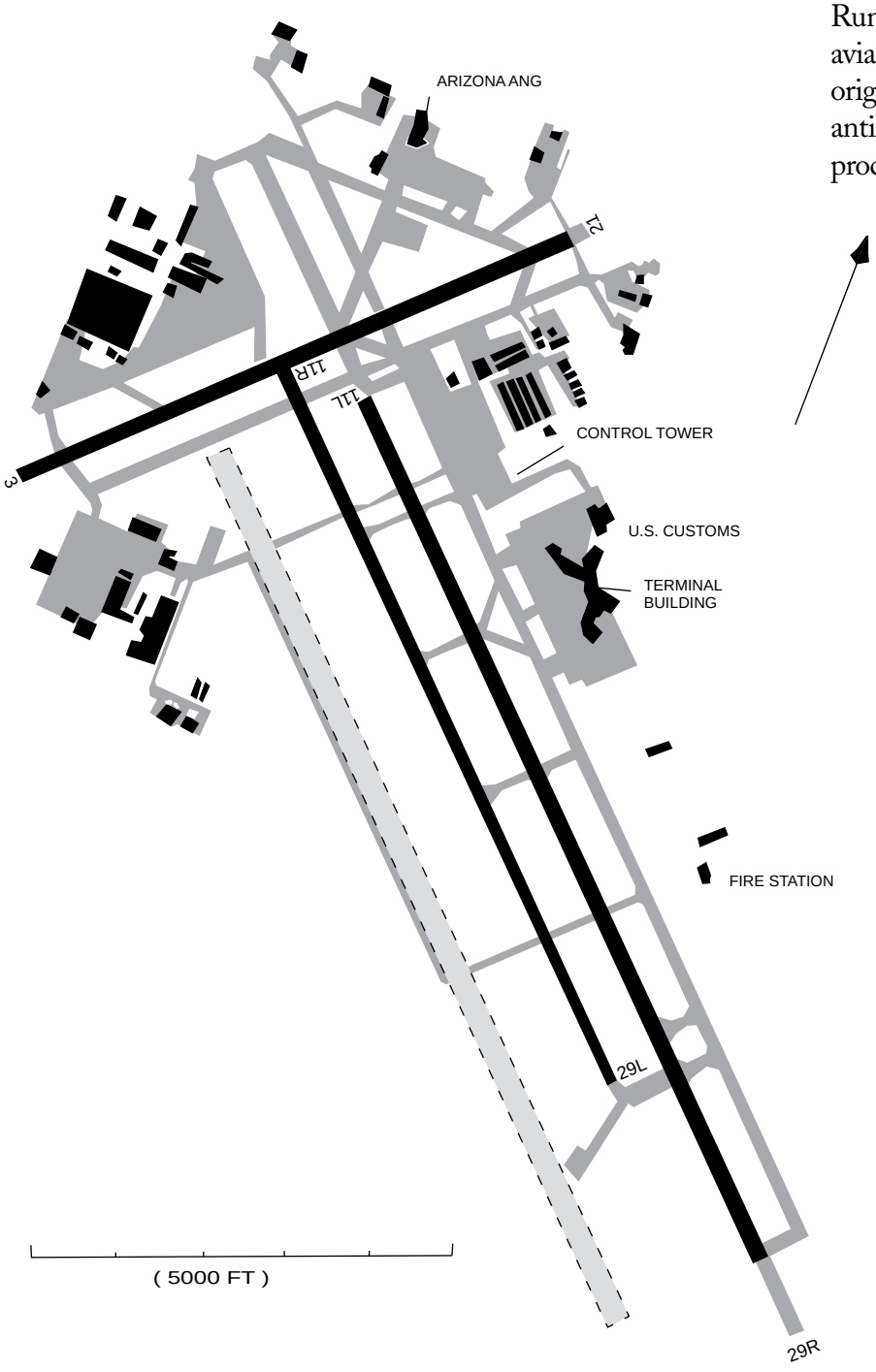
Tampa (TPA)

Plans have begun for a third parallel runway, Runway 18R/36L. The new runway will be 700 feet west of Runway 18R/36L and 9,650 feet long. Construction is planned to start in 1995. The estimated operational date for the runway is 1997 at a cost of $53 million. No increase in hourly IFR arrival capacity will be provided; however, VFR capacity will increase as well as IFR departure capacity.



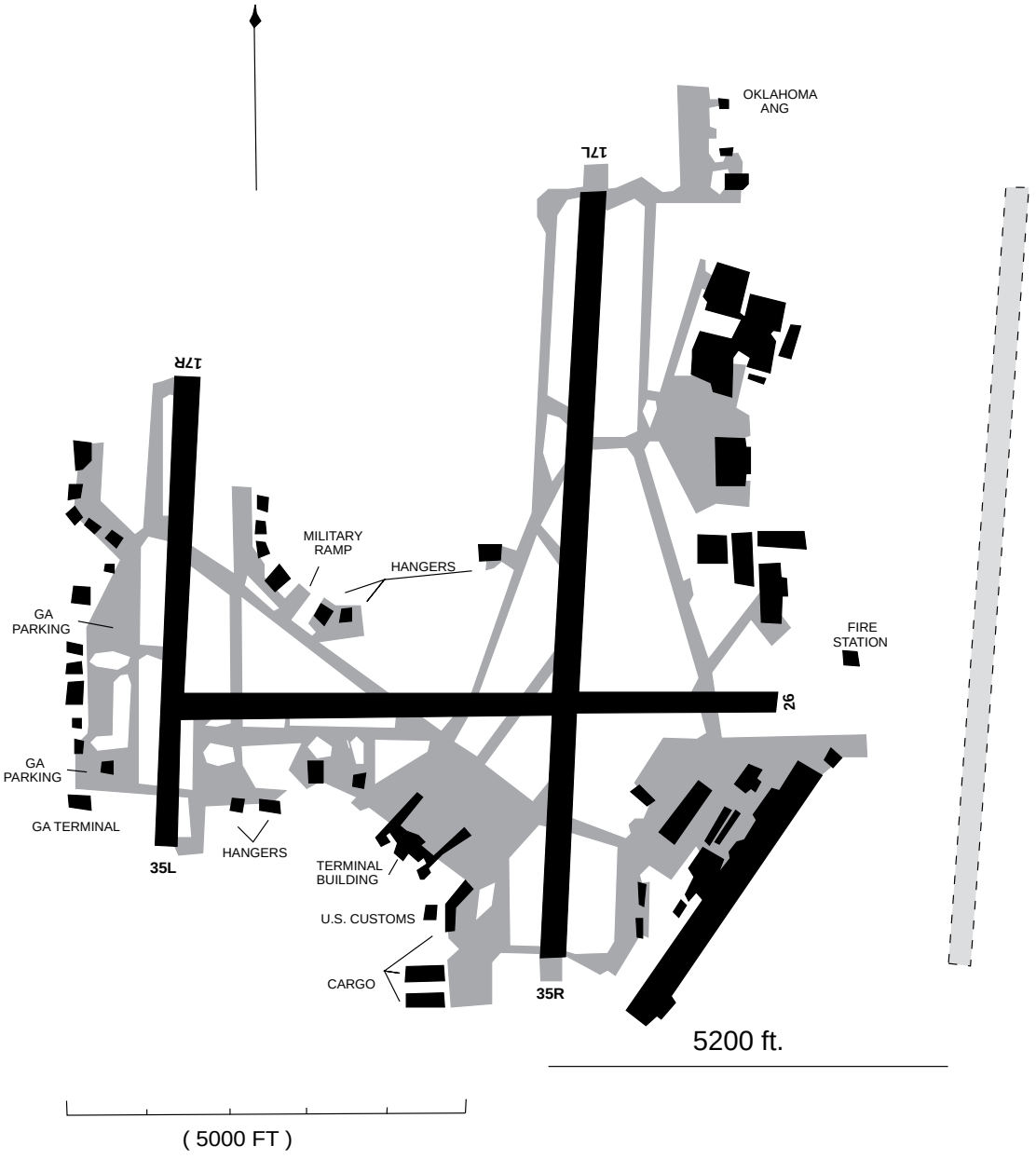
Tucson (TUS)

An additional parallel air carrier runway, Runway 11R/29L, has been proposed. Upon completion of the new runway, the current Runway 11R/29L, a general aviation runway, will revert to its original taxiway status. It is not anticipated that the sponsor will proceed before 1993-1995.



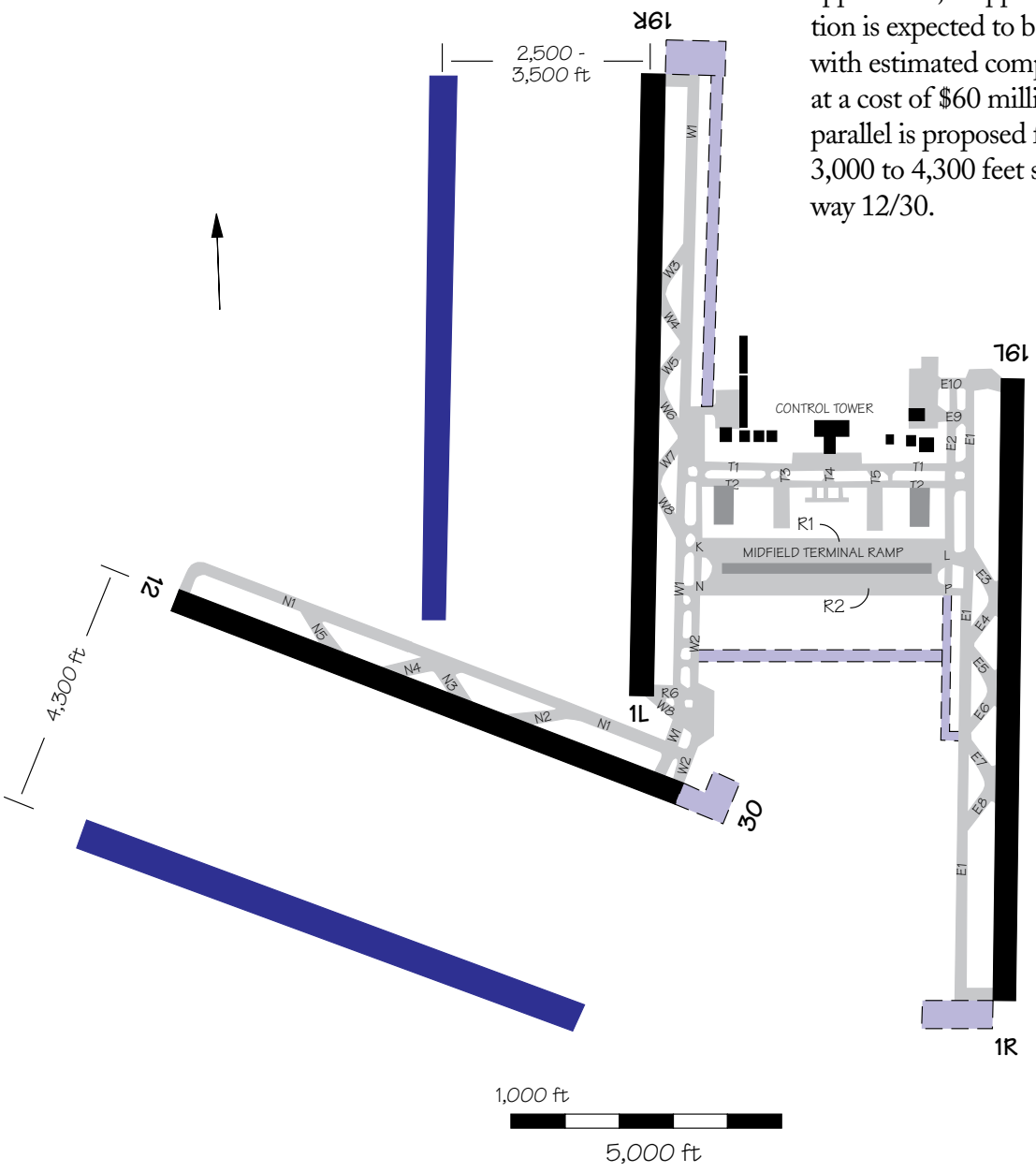
Tulsa (TUL)

A new parallel runway, Runway 17L/35R, is planned to be located 5,200 feet east of the present 17L/35R and will be 9,600 feet long. Construction is projected to start in January 1994 with an estimated operational date of July 1998. The cost of the new runway is estimated to be $100 million. The new runway could permit IFR triple independent approaches, if approved, to Runways 17L, 17C, and 17R.



Washington (IAD)

Construction of an extension to Runway 12/30 began in January 1991 and should be completed in September 1992. The estimated cost of construction is $7.2 million. Two new parallel runways are under consideration. A north-south parallel, Runway 1W/19W, is planned to be located 3,500 feet west of the existing parallels and north of Runway 12/30. This could provide triple independent parallel approaches, if approved. Construction is expected to begin in 1999 with estimated completion in 2000 at a cost of $60 million. A second parallel is proposed for location 3,000 to 4,300 feet south of Runway 12/30.



West Palm Beach (PBI)

The environmental process to extend Runway 9L/27R on both ends will be completed in December 1991. The runway will be extended 1,200 feet to the west and 811 feet to the east, for a total length of 10,000 feet. Construction is estimated to be completed in 1994. The total estimated project cost is $3.5 million.